

THE DUALITY OF TEACHERS AS LEARNERS THROUGH INFLUENCES OF SELF-  
REGULATION IN PEDAGOGICAL COMPETENCIES: A CASE STUDY

by

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Liberty University

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### **Abstract**

The purpose of this multiple case study was to describe the elements of self-regulated learning utilized by K-12 teachers navigating the process of improving instructional pedagogy and self-efficacy in a rural school district. The guiding theory of this study was Bandura's social cognitive theory of self-regulation, as it addresses the connection of self-directedness in goal attainment actions, motivation, and efficacy in learners. A multiple case study of twelve K-12 teachers in a rural school district was used to showcase the individuals' lenses of self-regulatory practices. Open-ended interviews focused on the patterns and experiences with self-regulation each educator exhibits while designing, modifying, and evaluating personal performance and efficacy. Participant observations and documented materials generated throughout the lesson delivery and reconstruction process were correlated with interview responses through categorical aggregation in process and value coding. Organizing participant responses into common self-regulatory domains such as goal setting, motivation, pedagogical modification, self-assessment, and efficacy can expose patterns of common strengths in self-regulatory practices for professional success, theming significant trends in successful domains of self-regulation to improve professional competencies in education.

*Keywords:* self-regulation, self-regulated learning, social cognitive theory, learning regulation

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**List of Abbreviations**

Self-Regulated Learning (SRL)

## CHAPTER ONE: INTRODUCTION

### Overview

Metacognitive processing, or an individual's ability to function within a higher-order cognitive function, allows people to create certain perceptions of beliefs and abilities of what they can achieve or not (Roebbers, 2017). From a constructivist's perspective, planning a course of action to achieve what one is capable of begins by anticipating the desired outcome of the stated goals (Bandura, 1986). The practice of self-regulated learning (SRL) follows a methodology that supports a substantial metacognitive approach to performance awareness and modification to achieve established goals. Established within Bandura's (1986) social-cognitive theory, SRL has been promoted heavily as a reliable tool for traversing the gap to mastery learning. Teachers are often considered the conservators of a technique such as SRL to be developed for student use.

Additionally, as teachers are consistently required to improve pedagogical performance, teachers must assume a dual role as a student of their craft, often requiring self-regulatory techniques while on course to become effective educators. The purpose of this case study was to describe the elements of self-regulated learning utilized by a dichotomy of teachers navigating the process of improving instructional pedagogy and self-efficacy across K-12 standards. Studying this problem provided valuable data to explore the influence of self-regulatory integration on professional competencies. This chapter will include a discussion of the historical, social, and theoretical context of self-regulation as a central element of professional regulation for educators. Additionally, the significance and purpose for researching this problem are developed with questions targeted towards educators' perceptions of SRL.

## **Background**

Self-regulated learning (SRL) integrates the cognitive, metacognitive, behavioral, motivational, and emotional/affective aspects of learning (Ader, 2019). Self-regulated learning refers to an individual's ability to understand and control their learning environment (Bandura, 1986). Common self-regulation abilities include goal-setting, self-monitoring, self-instruction, and self-reinforcement (Zhang & Zhang, 2019). The SRL helps educators to improve student achievement by implementing individualized learning modalities that are uniquely successful for each student (Karlin et al., 2020). Researchers such as Chen et al. (2019) noted that metacognitive, cognitive, and socio-emotional domains had become vital aspects of curriculum and instructional practices to increase learning motivation among students and instructors. Theoretically, evidence supports that students in the classroom have benefited from SRL (Chen et al., 2019; Zhang & Zhang, 2019); thus, the desire develops to explore how teachers perceive the use of the constructivist approach for professional improvements, including motivation and self-efficacy.

## **Historical Context**

Individualizing efforts and improvement practices originated as a cognitive developmental area of focus. Beginning in the 1970s, cognitive-behavioral researchers studied how to improve students' self-regulation with interventions of self-instruction and positive performance reinforcement (Ader, 2019). The need for development was introduced by Vygotsky (1962), presenting that the level of an individual's performance is based not on personal ability, but on the potential to drive progress across the zone of proximal development. The zone of proximal development describes how higher levels of functioning can be achieved using scaffolding tools that can be translated into self-direction (Vygotsky, 1962). Creating the

scaffolding links between a learner's current performance stage and the learning goal required a series of task strategies to guide the learner. Founding constructivist and social learning theorist Albert Bandura generated the foundational guidelines for bridging this gap with his social cognitive theory of self-regulation (Bandura, 1986). Self-regulation, and more specifically, self-regulation for learning (SRL), was developed into a foundational framework for understanding cognitive processes and motivations of learning (Schuster et al., 2020). From social learning foundations in educational psychology, the 1980s became the decade of self-regulation, with studies from Bandura, Zimmerman, Vygotsky, and Paris linking metacognition and regulation as potential techniques to bridge the zone of proximal development for learners (Schuster et al., 2020). Bandura's (1986) interpretation of regulation by addressing the "self" as the main agenda of conceptualizing effective learning tasks informed the constructivist perspective of including social implications within learning tasks for each individual as components of SRL development (Schunk & Zimmerman, 1989).

This successful initial approach to SRL for individuals in isolated case analysis led to the incorporation of SRL as an educational tool in classroom settings. In the late 1980s and 1990s, studies were conducted to investigate how self-regulation could inform or improve motivations in academic performance (Wirth et al., 2020). Studies were continuously conducted and replicated in large quantities to study self-regulation as a learning strategy and its implications for self-efficacy and intrinsic motivation by Bandura (1986), Beauchamp (2016), McCombs and Marzano (1990). These studies correlate by using similar self-reporting values of efficacy, motivation, and self-regulation. Results provide evidence of a consistent correlation between self-regulation as the best predictor of academic performance. Bandura's (1986) self-regulation and social cognition theories were used to conceptualize self-regulatory as a key element of

pedagogical competencies for educators in the 1990s. Bandura (1991) continued to expand upon this work, noting students being taught intrinsic regulatory strategies did not guarantee the strategy's success unless they could categorize, utilize, and assess the value of each stage of the process. McCombs and Marzano (1990) supported this claim, elaborating on Bandura's position that traditional academic skill was not sufficient in establishing substantial pedagogy of learning. An individual's skills upon initiation of a learning task are rarely effective at attaining mastery of a learning objective. The strategy and process of self-regulated learning must be modeled, implemented, and continually assessed for goal attainment to play an active role in the learning process (Shunk, 2016). Dzikowski (2013) expresses the practical analogy of being assigned to assemble a piece of furniture. Even with the goal of the finished work, the individual may be unable to efficiently complete the stages of task completion necessary to develop the finished product without the guidance of experienced mentorship.

Teachers now recognize the need to take additional steps to be reflective and analytical about their self-regulation practices to model SRL in the classroom (Paris & Winograd, 1993). Teacher self-awareness included thinking about personal processes and patterns, go-to strategies for guaranteed success, and incidences of situational motivation. Educators of the 1990s described a realization of a need to shift from designing curricula just for content instruction or managing student behaviors into design processes that would allow for the intent on developing specific strategies to motivate learners, rather than knowing pre-determined techniques off hand (Paris & Winograd, 1993). Teachers were encouraged to emphasize metacognitive processing to guide curriculum planning without a pre-established textbook strategy. Thinking about the plan, how it operates, and analyzing if the performance matches the intended goal insisted that

educators consider their most successful options before investing effort in ineffectual choices (Paris et al., 1983).

Productively making this shift in constructive cognitive processing abilities called for many educators to receive new training towards the end of the 1990s and into the 2000s. Teacher preparation courses working with pre-service teachers began testing SRL instruction from the educators' perspective rather than as an instructional tool for students (Du Bois & Staley, 1997). Corno and Randi (1997) then created the integration with professional training called collaborative innovation. Educators would need to collaborate in the future to be professionally developed by working together to develop and evaluate curricular pedagogies to become self-regulated (Corno & Randi, 1997). Collaborative opportunities were hailed as the most effective methods to generate realistic self-directed learning practices. Approaching specific academic task issues with paralleled scaffolding opportunities for self-management, effort regulation, and metacognitive self-regulation were positively trending patterns in educational programs that would continue their consistency beyond 2010 (Morris, 2020).

### **Social Context**

Throughout the historical context, self-regulated learning has centered on utilizing individualized strategies to improve student performance through rigorous and customized content. Bai and Wang (2020) claims educators must become effective learners before becoming effective teachers. Teachers need to be able to learn in and from practice since the knowledge to teach can hardly be obtained before or apart from practice (Kramarski & Heaysman, 2021). Classroom teachers in isolation during skill development are not able to adapt to design elements of pedagogy consistent with accomplished teachers (Pekrun, 2021). As this is tradition during undergraduate courses of study and for many entry-level teachers, the issue arises that teachers

are failing to generate professional improvements, leading to low levels of pedagogical performance, motivation, and self-efficacy. Kramarski and Heaysman (2021) reported that developing teachers had little knowledge of SRL techniques to regulate personal conduct. Their experience with self-regulation was so minute that even if familiar with the strategy in the context of student support, teachers cannot recognize SRL from observing a proficient educator or identify techniques within their strategy (Demirbag & Bahcivan, 2021).

The social components of teachers utilizing SRL for personal growth and professional competencies are bound to the social cognitive theory. Influence over an individual's self-regulatory stages is generated by a reciprocal and interactive comparison to another individual's benchmark of success (Kramarski & Heaysman, 2021). Teachers who have had the opportunity to receive scaffolded modeling of the self-monitoring and self-reactive subfunctions of self-regulation by an accomplished mentor teacher can improve efficacy and performance. In a constructivist mindset, developing skill and effectiveness is a direct result of collaborative efforts in feedback and environmental exploration, differentiating between developing and accomplished educators (Schunk & DiBenedetto, 2020). Kim et al. (2019) drives the conversation that educators have yet to unlock the potential of conscientiousness of the self-regulatory learning process and the motivation it can provide to innovating and improving pedagogy. Transitioning from a developing teacher to higher proficiency levels requires an innovative series of experiments supported by regulatory practices that target a consistent evaluation of events that limit pedagogical progress (Mohammed & Mohd, 2019). Awareness of the fundamental applications of SRL is more likely to increase motivation and performance adaptations for personal improvement in educators (Schunk & DiBenedetto, 2020).

## Theoretical Context

Self-regulation and the self-regulated learning processes through experience and peer collaboration are directly connected to teachers' beliefs on how to teach (Geduld, 2017). Even when provided with an intended performance target, often there remains a significant developmental gap between the knowledge base of the educator and the understanding of how to utilize abilities to self-regulate thoughts, motivations, cognition, and behaviors to approximate necessary preparations of instructional pedagogy. While educator instruction has been a process articulated in undergraduate programs for decades, the teaching of strategies that involve constructive metacognition for educator regulatory practices has been absent. McCombs and Marzano (1990) exposed that basic instruction and training are often insufficient for performance if the individual does not have an investment in their growth process. Although many educators identify with having bought into the value of achieving pedagogical success through curriculum and instruction, most teachers have limited knowledge of how to adapt their growth process effectively (Panadero, 2017). Shunk (2016) prompts the leadership in education to promote SRL as a teacher resource that can encourage mastery learning within a teacher's daily tasks.

Bandura's theory of self-regulation prompted the research of Zimmerman (1986) to apply concepts of self-regulation to socio-cognitive theory. Zimmerman speculated that the interactions of a learner's cognitive level, environment, and behavior worked collaboratively to form a reciprocating cognitive and emotional development process amongst the three zones, known as the Triadic Analysis of self-regulation (Zimmerman, 1989). Aligning with Bandura's stages of forethought, performance, and reflection, Zimmerman's later works expand upon the model of triadic self-regulation to incorporate aspects of motivation and efficacy that stem from the awareness of the evaluative process of self-regulation into a cyclical model (Panadero, 2017). In

each phase, students are asked to subjectively review their learning goal, performance practice, and assessment system for the validity of each stage in reaching the mastery goal. With each stage reciprocating from adjustments made in the flow of discourse, the calibration of regulatory practices and the learning growth generated enhanced a learners association with self-regulation and positive efficacy (Zimmerman, 2008).

Recent developments in SRL in support of educators have begun to explore the effects of self-regulation training in pre-service and novice teachers. Gencel and Saracaloglu (2018) approached a professional development session with entry-level teachers with a layered approach to self-regulatory techniques introduced to lesson planning and curriculum development. Gencel and Saracaloglu (2018) found that explicitly training educators improved the critical reflection of curriculum choices made. The use of active attributed to SRL is a beneficial tool within the teachers' daily environment, allowing for the development of each stage in a teacher's design process to be integrated with the learning of SRL. Inviting metacognitive action to develop with the reflection of critical experiences from the classroom in preparation for success in future experiences enhances teachers' professional competencies (Virtanen et al., 2017). This finding was replicated by Cresswell and Poth (2018). In particular, Cresswell and Poth (2018) used an epistemological assumption approach. They found evidence of entry educators' improvements to curriculum and instruction developed from guided experiences from mentorship involving self-regulated learning and regulation techniques for personal use.

The significant connections of pedagogical improvements in novice teachers' recognition and implementation of SRL strategies have defined this research study's focus. The curriculum improvement and the socio-cognitive element of self-efficacy can be explored within the stages of innovation (Uzuntiyaki-Kondakci et al., 2017). The development of self-regulatory practices

is best guided and developed within the authentic experiences that promote teacher effectiveness. Evidence generated from the collaboration of teachers during the stages of SRL may guide leadership opportunities supporting developing teachers. The research questions in this study will focus on evidence of SRL techniques that are present or lacking in the participants' experiences and perceptions.

### **Problem Statement**

The problem is that entry-level and developing teachers are failing to learn how to effectively improve pedagogical techniques within the first five years of professional evaluation (Karlen et al., 2020; Peters-Burton et al., 2020; Vrieling et al., 2018). This gap in teacher achievement is upheld by the findings that teachers with limited experience in identifying misconceptions of personal knowledge attainment, content application, assessment techniques, and additional professional competencies are failing to make progress in professional growth, often spinning their wheels on modifications that are ineffectual (Demirbag & Bahcivan, 2021). Performance improvement could be assimilated by the provided resources of professional development, time, and collaboration with educators who have successfully navigated self-regulatory techniques (Pellerone, 2021). The capability and skill driving the cyclical process of curriculum development and re-development come from the scaffolding of educators who have transitioned from developing to accomplished pedagogical performance. Identifying elements of SRL that are misunderstood or underutilized by teachers is critical towards efforts to provide effective professional training and support for pedagogy and self-efficacy of the educator (Mohammed & Mohd, 2019).

### **Purpose Statement**

The purpose of this case study will be to describe the elements of self-regulated learning utilized by a dichotomy of teachers in RAMS rural school district navigating the process of improving instructional pedagogy and self-efficacy across K-12 standards. At this stage in the research, self-regulated learning will be generally defined as an individual's self-generated cognition and behavior oriented towards goal achievement (Pellerone, 2021). Domains of self-regulatory stages exhibited by the study participants can be attributed to pedagogical improvement techniques for the professional development of educators. At this stage in the research, self-regulated learning will generally be defined as the use of metacognition to influence the external environment by engaging in self-observation, self-judgment, and self-reaction oriented toward attaining different learning goals (Bandura, 1986, Zimmerman, 1986).

### **Significance of the Study**

Despite the best of intentions, neither determination nor desire alone has much impact on achieving the desired goal if the individual cannot exercise a proactive and productive influence over their motivation, behavior, and focus of practice (Bandura, 1991). While it is identified that educators are coached in self-regulation as a student support technique, little evidence exists regarding how the educators themselves can use SRL strategies to improve personal growth (Geduld, 2017). Identifying the active self-regulatory capacities can provide evidence for mentorship and professional development opportunities to circumvent the achievement gap of pedagogical application in the teaching profession.

### **Theoretical Significance**

Self-regulatory strategies have been identified as significant components of the constructivist and social learning theories (Shunk 2016). The majority of evidence has focused

on utilizing Banduras' (1991) stages of self-observation, judgment, and self-response within the realm of student learners. In this study, the findings will offer insights into the perceptions and implementation of SRL skills focused on self-reported pedagogical improvement in educators, optimizing the critical elements of self-observation, judgment, and self-response. Observing the translation of an educator to a learner provides a new perspective on the interconnection of self-regulation, constructivist cognition, and efficacy (Panadero, 2017). This case study will identify the self-regulatory approaches among teachers tasked with revising curriculum and instruction practices through Bandura's (1991) self-regulation stages, responsible for promoting successful pedagogical competencies.

### **Empirical Significance**

Perceptions of successfully exhibited self-regulated techniques could be vital in developing curriculum and raising awareness of the barriers to pedagogical competencies (Geduld, 2017). Providing a perceived influence of the level of SRL in teachers' professional competencies can add a layer of understanding to the perceived competencies of educators in our classrooms, leading to the integration of metacognition for successful, positive behaviors. (Kramarski & Kohen, 2017; Virtanen et al., 2017). To explore this concept, this study will follow the established design of modern SRL research conducted by Gencel and Saracaloglu (2018) and Hursen (2016). Perception-based data generated by single and multiple case studies have presented holistic pattern descriptions of SRL through the forethought, performance, and assessment phases working towards goal attainment of performance strategies (Gencel & Saracaloglu, 2018; Hursen, 2016). Comparative measures across case studies of the accomplished teacher model of SRL to that of the novice educator who is not represented by the

integration of socio-cognitive development can potentially impact how the education community approaches the training of developing educators.

### **Practical Significance**

Supporting teachers begins with the systematic problem solving of underdeveloped pedagogical skills after starting a teacher's career. To address gaps in pedagogical development, sub-processes of SRL needed by teachers knowingly or unknowingly progressing through the self-regulatory domains can be identified and categorized (Peters-Burton et al., 2020). As Geduld (2017) identified, teachers cannot translate the barriers in their pedagogy into modified solutions as the complexity of the process of self-regulation is not one that can be constructed independently or over time with personal experience. Therefore, the self-regulatory techniques identified as lacking for struggling teachers in this study can be scaffolded by experienced mentor teachers as a standardized and cyclical support structure of SRL. Developing the abilities of self-regulated events in the holistic view of professional competencies can provide teachers the tools to construct mastery performance targets and scaffolding steps for themselves, increasing effectiveness (Shunk & DiBenedetto, 2020).

### **Research Questions**

The participants of this case study had diverse experiences and performance ratings in developing and delivering pedagogy within their content area. Additionally, these individual educators had limited experiences with self-regulated learning in formal professional development in self-regulatory strategies to support professional competencies. The focus of the open-ended interviews was to probe each participant for their perceptions of SRL and evidence of SRL in self-monitoring, instruction, evaluation, and efficacy.

**Central Research Question**

What are teachers' perceptions of self-regulated learning strategies in personal pedagogical growth?

**Sub-Question One**

What are the perceptions of K-12 teachers of using self-regulation to analyze pedagogical performance in the classroom?

**Sub-Question Two**

How does the perceived value of a self-regulated learning strategy influence K-12 teachers' self-efficacy?

**Sub-Question Three**

How does the perception of self-regulated learning strategy utilization influence K-12 teachers' motivation?

**Definitions**

1. *Active Learning*- Active learning is an instructional method that requires students to do meaningful learning activities with metacognition. (Bonwell & Eison, 1991).
2. *Collaborative Learning*- Learners utilize each other's perspectives and experiences to solve problems and develop new understandings through dialogue and social interaction to perform outside their capabilities. (Rutherford, 2015).
3. *Mastery Learning*- Excellence for all learners reflects knowledge and skill attainment at a high achievement standard. (Emery et al., 2017).
4. *Modeling*- Behavioral, cognitive, and affective changes derived from observing an established model (Rosenthal & Zimmerman, 1978).

5. *Pedagogy*- The study of teaching methods, such as the goals of education and how such goals may be achieved in theory and practice (Panadero, 2017).
6. *Scaffolding*- Mentorship provides guided stepping stones to help learners acquire skills that they would be unable to gain without intervention assistance (Shunk & Zimmerman, 2008).
7. *Self-efficacy*- Individual's belief in their capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977).
8. *Self-Regulated Learning*- An individual's self-generated cognition and behavior oriented towards goal achievement (Sitzmann & Ely, 2011).

### **Summary**

As the complexity of learners continues to increase within K-12 classrooms, educators are under unique and strenuous pressure to improve pedagogical performance. While teachers quickly recognize the importance of growth measures in professional competencies to increase effectiveness, exceptionally few entry-level educators are equipped with the self-regulatory strategies needed to approach such a task (Peters-Burton et al., 2020; Vrieling & de Laat, 2019). While many self-regulatory techniques have been applied to students, a significant gap remains in utilizing the self-regulated learning process for educators functioning under the duality of a learner to be effective educators (Peeters, 2014). This case study will consist of a description of the elements of self-regulated learning utilized by teachers navigating the process of improving instructional pedagogy and self-efficacy in a rural K-12 district. Supporting teachers in their personal development requires the re-engagement of constructivist techniques under Bandura's social-cognitive theory (Panadero, 2017). Exploring how educators function under the lens of self-regulation compared to those who have successfully navigated the multi-faceted processes

of SRL can provide much-needed background to inform the support of mentorship and professional development for novice educators.

## **CHAPTER TWO: LITERATURE REVIEW**

### **Overview**

The role of an educator undergoing the process of effectively developing professional competencies in curriculum and instruction relates to the learner and guiding instructor (Kramarski & Heaysman, 2021). Self-regulation of an individual's regulatory practices is a vital component of a successful progression from novice to experienced educators (Pekrun, 2021; Slemp et al., 2019). Self-regulation does not simply happen to learners; instead, students create it as they experience a proactive process of steps towards goal attainment (Pekrun, 2021).

This chapter consists of the existing literature and significant research regarding the domains of self-regulation to synthesize the conjecture of both theory and practice regarding the effectiveness of self-regulation for learning. The following literature review is organized according to the stages of self-regulation composed of Bandura's (1896, 1991) theory of self-regulatory learning: forethought and goal setting, performance practices (exploration of pedagogy, curriculum design and modification, and professional training), and feedback. In this chapter, the theoretical foundations of social cognitive theory will be explored in the context of self-regulatory practices as a performance enhancement tool in related literature.

### **Theoretical Framework**

Developed by Albert Bandura, the social cognitive theory is a metacognitive strategy representing a component of constructivist learning (Bandura, 1991). Bandura conceptualized an individual's construction of cognitive processing as cultivated by the responses of social engagement and a behaviorist perception (Barr & Williams, 2018). Comparing personal performance to others constructs a guidance system for generating effort, performance, and behavioral standards. Panadero (2017) claimed that analyzing the scope of social influence and

expectation generates self-diagnostics, motivation for task performance, and self-efficacy. This concept of self-diagnostics parallels Bandura's (1991) observations of individuals modeling their social behaviors and performance expectations after the examples they witness that receive positive feedback from a peer group, which creates a guide of personal expectation (Bandura, 1991). In conjunction with SRL interventions within Bandura's (2001) social cognitive learning theory, motivation and behavior show larger effect sizes in effective SRL techniques for performance improvement and goal attainment than singularly metacognitive approaches (Barr & Williams, 2018).

Triadic self-regulation processing depicts the reciprocal causation amongst the personal, behavioral, and environmental elements scaffolding an individual's social constructivist platform (Zimmerman, 1989). Within this process, behavior factors may or may not have a greater value to the learner than the environmental factors based upon the context of the objective goal. Bandura explains that reciprocity does not mean a balance in strength or temporal patterning of bidirectional influence (Zimmerman, 1989). Responses to stimuli and social responses can alter self-regulation tendencies as the learner discovers how to control personal motivations based upon received social feedback within each domain. Intrinsic elements of the self-regulatory process are formed from the experiences of everyone within the triadic structure. Triadic self-regulation and bidirectional influence are also described as epistemic reflexivity. Barr and Williams (2018) described that epistemic reflexivity, or the validation of knowledge and understanding of an individual's personal level of knowledge, is an important component of SRL, congruent with Zimmerman's (1989) cyclical reciprocity. Since self-regulation represents a comparative standard based upon reflective and reflexive performance assessment and comparison practices, validating personal knowledge and growth depends on an internal dialogue

about particular practices and resolved actions aligned with actual and expected performance indicators (Barr & Williams, 2018).

From this concept, Bandura's (1991) processes of self-monitoring, judgment, and self-reactivity can be assimilated into the domains of forethought, performance, and self-reflection for teachers to outline a path of goal attainment. Using the SRL assessment of each learner, choices of the metacognitive pathways and motivations for the effects towards a learning goal can assist in the determination of the zone of proximal development in the context of SRL abilities (Panadero, 2017). Exploring learners' awareness of SRL strategies and what strategies they need to acquire is critical for integrating theory and practice in self-regulated learning. To maintain the active metacognitive nature of information manipulation, self-regulated learning progress is dependent on the tuning and restructuring of each stage of SRL.

### **Related Literature**

Learners are self-regulated when they consistently use metacognitive and behavioral approaches to guide their progression towards a performance goal (Peters-Burton et al., 2020). As a cyclical learning process, effective self-regulation encourages the individual to analyze and adapt their chosen learning techniques throughout Bandura's (1989, 1991) stages of self-regulatory learning. Examining the progressions of the effective usages of self-regulatory techniques within each stage of forethought, goal setting, performance, and feedback encourages the learners' self-assessment. The integration of the understanding of personal learning and the continued practice of curriculum design and modification is presented by literature related to Bandura's (1991) self-regulated learning theory.

## **The Forethought Phase and Self-Regulation for Educators**

Self-regulation represents a transitional system of phases that guide individuals through their metacognitive processes (Usher & Schunk, 2018). Metacognition, however, must begin with an individual's awareness that monitoring their personal goals, progress, and applicational success begins with establishing frontloading of the task at hand and the desired outcome. This self-monitoring function, more commonly known as the forethought phase in self-regulation, is a deliberate analysis of the enormous scope of the objective that needs to be accomplished and the most effective methodology required for the individual to attain the established goal (Schunk & DiBenedetto, 2020). In the initial stages of SRL, people form beliefs about what they can do while setting goals for themselves (Schunk & DiBenedetto, 2020). Forethought begins by establishing these beliefs within formal processes of goal setting, and concept mapping positively influences future knowledge acquisition, planning, and evaluation of performance (Gencel et al., 2018). Agreeing with Gencel et al. (2019), Demirbag and Bahcivan (2021) established an increase in individuals' performance expectations and motivation when implementing new practices to attain goals when they are supported through different self-regulation strategies compared to those without self-regulation support. Extending on Demirbag and Bahcivan's (2021) findings, Pellerone, M. (2021) established that collaboration improved teachers self-efficacy and self-regulation, which directly manifested in improved teacher motivation and performance. The studies reviewed indicate that forethought is important in teaching as it directly involves the activation of motivational beliefs, such as sense of self-efficacy, self-regulation, the value assigned to different tasks, and goal orientation that is key for improved performance.

Existing literature has indicated that setting personal performance goals with the intentional practice of goal setting is a practice critical to the forethought phase in developing new cognitive knowledge. As a vital point in initializing self-regulation, Li et al. (2018) conducted a systematic literature review to explore the association between self-regulation and teacher performance centered on short-term goal setting practices would increase the probability of the individual meeting the pre-identified objective. According to the systematic review analysis, Li et al. (2018) established that self-regulation phases such as forethought was critical for creating motivation, self-efficacy, and performance because proactive learners are likely to self-regulate more effectively given that they engage in high-quality forethought practices of planning, collaboration and setting performance expectations through self-regulation. Agreeing with Li et al. (2018). Zhu and Mok (2018) also reported that forethought techniques such as planning and self-belief are important in self-regulation during the learning process because not only are learners supposed to collaborate with a mentor but should contain both short and long-term goal statements for quick gains. The article reviewed indicate that forethought phase in important in self-regulation of learners given that they are given the opportunity to create goals, plans, performance expectation and motivation needed to achieve their learning goals.

In forethought phase, each perspective and goal setting provides a context to interpret content and guide the scaffolding process between knowledge acquisition and self-reflection. For instance, Bittner et al. (2021) in a qualitative study on the relationship between forethought phase and academic performance reported that that the goals set in short-term timeframes were more easily obtained, monitored, and generated higher levels of motivation than the long-term goal. Comparable findings to those of Bittner et al. (2021) were reported in a different a qualitative study with 43 secondary student sample group by McCardle et al. (2019). After data analysis, the

investigators found that without collaborative input during the generation of two short-term performance goals and a long-term mastery goal per learner, goals were set with minimal reference to SRL direction, task understanding, and limited experiences (McCardle et al., 2019). The researchers concluded that poor goal setting could predict week performance attributed to procrastination, a key form of self-regulation learning failure (McCardle et al., 2019). In an earlier study, Vreiling et al. (2018) recruited 343 training teachers to complete Motivation and Metacognition (MMQ) Likert scale surveys for intrinsic goal orientation to evaluate their understanding of course material, the value of selected tasks within the goal, or task performance. The investigators found that poor goal setting and strong belief of motivation and goal expectations resulted in weak performance among teachers within the forethought phase (Vreiling et al., 2018). Further analysis from a multidimensional study of 2000 students found that establishing short-term goals within the cyclical modification process of establishing effective practices to enhance personal performance is best utilized when scaffolded by experienced teacher mentorship as a training tool to develop effective goal-setting methods and promote efficacy (Zhu & Mok, 2018). Overall, the evidence reviewed from different peer-reviewed articles indicate that designing short-term goals within the context of a forethought concept map implicitly staging opportunities for self-reflection, progress monitoring, and modification delineates the process of improving performance on pedagogy or a learning task.

Goal statements generated also focused on the behavioral domain of social cognitive theory rather than performance outcomes and knowledge attainment. As an illustration, Vreiling et al. (2018) conducted a systematic literature review on how to best facilitate teacher educators in finding a balance to guide teacher candidates in the process of goal setting. Findings attribute goal setting when scaffolded without the reinforcement of mentorship in environmental and

behavioral domains of self-regulation can produce goal setting practices but is ineffectual at generating progress in accomplishing the said goal. Similar findings to those of Vrieling et al. (2018) were reported by Ibarra-Sáiz et al. (2020) who found that understanding that the isolation of goal-setting practices is ineffective to kick-start self-regulated performance improvement, the forethought, and planning stages of SRL must also include substantive strategies that connect the personal, behavioral, and environmental domains. Corroborating previous findings by Ibarra-Sáiz et al. (2020), Zheng et al. (2020) also established that forethought phase, though effective when beginning with goal setting practices, was increasingly effective when there was collaboration on the goal orientations and critical strategies of timeline organization and planning knowledge acquisition and performance reflection.

There are several forms frontloading knowledge of SRL strategy. For instance, Batool et al. (2019) noted that frontloading knowledge of SRL strategy included learner outlining plans for knowledge acquirement, practice, and intensifying practices in higher-order processing that would evoke what the learner would naturally take on before any formal instruction occurs for how to attain the goal. The findings were amplified by Cañabate et al. (2020) who also reported that frontloading knowledge of SRL strategy processes involve in the planning outline may include concept maps, timelines, resource lists, mentor input, or these strategies to bridge the desired outcome to the current accessibility of knowledge and skill. With this SRL supplemental practice in the forethought stage as reported by Cañabate et al. (2020) concerning its effectiveness, Zhu and Mok (2018) also had earlier established the forethought phase integrating a teacher mentor influenced learners' goals with likelihood of greater learner success above any other SRL phase or strategy. Therefore, in order for students to maximize the support from future phases of self-regulation, including the attainment of both performance and mastery goals, the

learner must collaboratively practice goal setting and performance strategy planning within the forethought domain.

### **The Performance Phase of Self-Regulation for Educators**

The performance phase of SRL tasks the individual following the concept plan established in the forethought phase to ascertain the desired goal. Bandura (1991) expresses the integrity of the performance phase is generated from the sociological comparison of personal skill and accomplishments compared to the benchmark set by others. This allows for a formative assessment of performance, triggering factors of self-regulatory motivation to improve individual skills, surpassing the peer group (Cañabate et al., 2020). Similarly, Zheng et al. (2020) also established a significant shift from traditional knowledge acquisition methods is that a scaffolded performance comparison supports individuals' self-regulation by modeling expected behaviors and content presentation. In a study conducted by Vreiling et al. (2018), the performance phase, which is traditionally isolated from supporting factors of scaffolding, required the additional guidance of an instructor or successful peer. Based on the analysis conducted, the evidence suggests that scaffolding is a needed component to segment identification and exploration of learning gaps and identify content resources necessary to establish performance growth.

A critical success factor for teachers' academic development concerns a supportive environment to scaffold good teaching practices. As per Zheng et al. (2020), this calls for supporting educators with a synergy of performance strategies that include organizational practices, pedagogical theories, and attention to social relationships that can foster self-regulated competencies in these areas. To improve personal performance strategies or tasks, Vrieling et al. (2018) established that most participants supported the collaboration of educators in scenarios when metacognition is a performance strategy that is modeled and practiced within the context of

the desired improvement goal. This far, the analysis conducted indicates that the comparison of the study and practice of instructional improvement within a peer modeling scenario has increased the skills of personal self-reflection and efficacy while expecting and encouraging the process of questioning, clarifying, and recounting the experiences within the performance phase.

### **Performance Phase Strategy: Exploration of Pedagogy**

A primary focus of the performance phase is the improvement of pedagogy. In a qualitative study influence of performance phase on pedagogy, Otte et al. (2020) found that most educators noted that although they could recall the theoretical frameworks of Albert Bandura and acknowledge the validity of the social cognitive theory, using SRL as a pedagogical approach to learn for themselves or to improve teaching performance is not a strategy that has earned a large investment. In previous study by Otte et al. (2020), Chen and Jang (2019) also found that most educators recognized the importance of SRL to regulate personal growth, but had never utilized self-regulatory strategies for themselves or their students. The evidence reviewed indicate that teachers' initial impression of using new techniques to monitor personal growth reflects their role as a learner in improving professional capabilities.

Just as a learner in a classroom would hesitate with new pedagogy and motivation levels, a teacher's needs from the learner's perspective must be transitioned into that of autonomous performance regulation. From a multivariate analysis of ninety preservice teachers, Teng and Zhang (2020) assessed the frequency of the utilization of SRL processes with and without the collaborative modeling of an SRL mentor. Upon conducting the analysis, the researchers established that with active learning stimulated by mentorship, preservice teachers improved SRL applications by 82%, compared to a 68% improvement in the non-scaffolded group (Teng & Zhang, 2020). Like Teng and Zhang (2020), Nückles et al. (2020) also found that teachers and

preservice teachers served dual purposes as instructors and learners, which requires them to constantly bridge the dual self-regulation roles in teaching and learning. In an earlier study to Nückles et al. (2020) and Parallel to active modeling, Slemp et al. (2019) established the relationship shared with self-determination theory (SDT). Slemp et al. (2019) found that that growth through autonomy and competence in skill ability is directly related to controlled forms of motivation. As per the evidence reviewed, it was evident that when collaborating within the process of SRL to improve performance, self-determination increases as socio-cognitive feedback endorses the value of work being done, which increases motivation and engagement in future tasks.

### **Performance Phase Strategy: Curriculum Design and Modification**

An additional factor of the performance phase is curriculum design and modification. Collaboratory efforts in SRL can positively influence the development of instructional methods and pedagogical techniques that will improve a teacher's performance within the classroom. Peel (2020) established that teachers with strong self-regulation skills are more likely to be engaged with thinking about students, lessons, and structures proceedings of pedagogy throughout the day. Similar to Peel's (2020) findings, Anthonysamy et al. (2020) also established that learning opportunities through metacognition of daily experiences in curriculum design and instruction engages the necessity for utilizing self-regulated learning. In essence, self-monitoring influences the desire and process to develop new knowledge for content instruction and pedagogical depth (McGrath et al., 2018). This increases the number of modifications to the implemented curriculum and improves professional decision-making and the quality and quantity of goals met towards performance tasks. Evidence from teacher observations within the case showcased that self-regulation was an observable behavior displayed using specific strategies that teachers used

to take control of their learning, task planning, and progress monitoring (Tseng et al., 2019). As a result, organizational trademarks were significantly consequential to self-regulation skills during curriculum design and modification (Tseng et al., 2019). The analysis conducted reveals that prioritizing tasks organizing information, and sequentially managing multiple tasks during instructional planning would have been enriched if metacognitive self-regulation could have been paced to a social constructivist approach with an experienced mentor.

Tseng et al. (2019) identified a correlation between curriculum design and SRL with a systematic review of self-regulatory research studies. Monitoring curriculum innovation as an element of a teacher's behavior is a multiple-stage process where the individual establishes goals, plans, and experiences to evaluate growth in effectiveness (Tseng et al., 2019). Equally, Matcha et al. (2019) noted that this process begins with teachers creating a concept map that breaks down the pedagogical techniques that would match specific objectives for curriculum needs and performance standards evaluated throughout the experimentation phases of instruction. Similar to Matcha et al. (2019), Carter Jr. et al. (2020) also amplified that the concept of SRL within elements of curriculum design is rooted in assessing the growth in adjusted variables of pedagogy that are experimental factors in newly delivered lessons. The articles reviewed indicate that encompassing innovative behaviors of observing, listening to, and adapting ideas help build a strategy of action, which must be assessed through reflection and evaluation to successfully adjust future innovation.

Individuals who allow themselves the vulnerability of successes and failures with instructional experimentation will find the synthesis of curriculum content knowledge and SRL pedagogy. In a study designed to identify self-regulatory factors from a teacher's perspective, Lee et al. (2019) found a positive reciprocal correlation between teachers' self-regulation and the

level of content knowledge and lesson delivery through the forethought, performance, and self-reflection phases. Blau et al. (2020) also established that teachers pacing through the stages of SRL increase positive self-reactions, adapt instruction frequently and easily and attribute performance effectiveness to teaching strategies identified through concept mapping and experimentation. Research conducted by Wang and Chen (2020) supported Blau et al.'s (2020) findings, aligning the concept of self-reflection within experimentation as a form of extensive learning. This active and authentic learning style supersedes basic theory or professional development levels that trigger additional SRL stages and practices. In 2018, Gencel and Saracaloglu (2018) conducted a similar experiment on 80 preservice teachers, assessing self-regulation levels after applying curriculum design with SRL to evaluate levels of individual regulation with the Self-Directed Learning Readiness Scale. It was concluded that self-regulatory processes and skills increase autonomy for the user when applied within the process of designing and experimenting with pedagogical approaches within the curriculum (Gencel and Saracaloglu, 2018).

### **Performance Phase Strategy: Professional Training**

As Zimmerman's (1998) model of self-regulated learning has guided us, learners do not spontaneously engage in SRL. Most learners need to develop the necessary skills to cognitively interpret the processes that can take them from a learning goal to the finish line of performance (Ganda & Boruchovitch, 2018). The analysis of self-regulatory performance practices involves critical communication while thinking of the attitudes and dispositions of self-regulatory learning while making strides towards a performance goal. A teacher, assuming the role of a learner, is more responsible for managing professional development than their district of employment (McGrath et al., 2018). Being critical of pedagogical practices must become part of a dialogue

driving educators to unpack the aspects of their knowledge and experiences, working through analysis practices that critique their pedagogical choices and focus professional development efforts (Blau et al., 2020).

Virtanen et al. (2017) reported that self-regulated learning is promoted when active learning by creation and experience is increased via goal orientation and professional learning tasks. In a quantitative study from the survey responses of 422 pre-service teachers on the Self-Regulation in Learning Instrument, using one-way multivariate analysis of variance (MANOVA), Virtanen et al. (2017) found significant trends in SRL amongst ability levels of educators' professional competencies. Pedagogical competencies such as curricular elements of resource selection, planning, organizing, and self-management showed lower frequency means of use amongst novice educators ( $m = 2.50$ ) compared to accomplished educators ( $m = 3.51$ ). Educators competent in self-regulated learning out-perform peers less proficient in both comprehension and lesson design. A significant factor in teacher proficiency is self-regulating the comprehension of procedural knowledge (Huang et al., 2020). Procedural knowledge, as described by Huang et al. (2020) is the knowledge of how to accomplish specific tasks by directly relying on SRL through monitoring, evaluating, and modifying practices to reach a performance goal. Accomplished educators have stronger awareness of the processes used to regulate improvement of academic achievement (Huang et al., 2020; Virtanen et al., 2017). For novice teachers, experiences as self-regulated learners to improve professional competencies are lacking, and we have not yet conceptualized how SRL techniques are involved in improvement efforts from the novice perspective. It is known that successful self-regulated learners have high levels of metacognitive awareness, an imperative component of SRL (Karlen et al., 2020). Interestingly, from the initiation of teacher training, preservice teachers report minimal

instruction or exposure to SRL strategies, translated to low ability levels of successful self-regulation of performance improvement (Karlen et al., 2020). Help-seeking for pedagogical improvement requires novice teachers to become aware of their need for help in metacognitive and behavioral regulation, which is rarely seen without an ingredient of scaffolding through collaboration (Won et al., 2019).

It remains a theme that collaborative learning amongst teachers stimulates professional competencies and pedagogical growth, along with self-regulatory techniques (Vrieling et al., 2019). Learning would require greater effort if people solely relied on the products of their own decisions and actions to inform them what to do (Barr & Williams, 2018). As expected, performance is derived from social constructivism, with social comparison as the reflexive practice that can traverse an individual throughout the stages of self-regulation. Schunk and DiBenedetto (2020) state that self-regulated learning is based on the premise that for individuals to achieve mastery of learning and performance, metacognition must be scaffolded, regulated, and assessed collaboratively in cyclical stages that parallel triadic reciprocity in social cognitive theory. Zimmerman (1989) supported this connection between social cognition and self-regulation, adding that the more metacognitively, motivationally, and behaviorally active an individual is in their personal learning process with initiating and guiding their efforts towards knowledge and skill, the more learners would represent successful contemporary actions concerning strategies for reaching their goals.

From the constructivist mindset, most human behavior is constructed observationally through modeling (Vygotsky, 1962). By referencing the actions and outcomes of others, learners form and catalog ideals of how new behaviors are performed, informing their metacognition, and serving as a guide for their future actions (Bandura, 1977). The fluidity of self-regulated

learnings bidirectional patterns between the forethought and performance phases of self-regulation generates a checks-and-balances system amongst the personal, behavioral, and environmental domains. Conjectures of personal performance are measured against environmental influences, primarily regulated to the impact of modeled examples as a self-regulatory tool (Bembenutty et al., 2015). Encouraging the process of self-regulated learning for educators to apply to their practices is important to develop a consistent evaluation of the cognitive motivations, behaviors, and levels of instructional performance in the classroom that allow a teacher to be successful in the changing landscape of learners' abilities and needs (Geduld, 2017). Each stage of self-regulation is reflected upon and assessed intrinsically and against the social comparison to environmental expectations. Dynamics of how individuals interpret and respond to the self-regulation strategy selection and reciprocal feedback determine the progressions throughout the triadic relationship of the individual self and self-regulation. Individuals that can assimilate desired sociological reactions to the context of SRL are constructing working knowledge of their metacognition. Utilizing collaborative practices for social cognitive conditioning to encourage performance enhancement is one of the most critical success factors for progress development (Pedrosa-de-Jesus, 2017). The construction of expectations will parallel the construction of motivational and performance margins assimilated by the social collective for improving performance on a precisely measured task objective. The collaboration of teacher groups offers greater opportunities for meaningful development of self-regulatory techniques are often forgone when teachers attempt to improve professional competencies independently.

Over the years, educational stakeholders have emphasized the significance of educators improving their skills and continued pursuit of professional development (Clark & Newberry,

2018). Barr and Askill-Williams (2020) established that teachers undergoing professional development of curriculum and instruction competencies with peer collaboration involving SRL strategies were significantly more successful than educators independently attempting to improve performance. Muhonen et al. (2022) stated that enhanced teacher professional development and training equipped teachers to deliver their instructions better, develop critical organizational and planning skills and gain advanced knowledge on education and instructional delivery. Gregory and Boglarka (2019) investigated teachers' pedagogical skills and provision of quality education, finding improved teacher competencies through in-service training which enhanced their conceptualization of content and instruction. Tantawy (2020) agreed with Gregory and Boglarka (2019) that training teachers equipped them with the pedagogical skills needed to improve their content delivery in classrooms. Li et al. (2019), in a quantitative survey with 928 teachers, found that teachers' perceived training as important in improving self-efficacy and a predictor of improved growth, pedagogical readiness, and overall class performance. Therefore, it is important to note that training and professional development positively enhance teacher pedagogy. Popova et al. (2021) conducted quantitative research with 139 teacher training programs in 14 countries. They found that training teachers taught them new skills that limited follow-up revisions to curriculum and instruction, and positively cultivated their growth and performance. Across the discussed studies, teacher training improved teacher performance and positively mediated teacher professional growth.

The most frequently cited reason for low performance in pedagogy, curriculum, and instruction is the lack of professional training in the new curriculum and how to improve upon what exists to reach a higher level of performance not accessible when taking pre-written curriculum at face value (Barr & Askill-Williams, 2020). Blau et al. (2020) found that within the

initial stages of training, most educators identified the importance of modifying the current curriculum but are unable to trace their efforts in curriculum revision methodologically or target strategies attempted or evaluated for their effectiveness after instruction has taken place with the curriculum revisions (as a critical indicator of SRL strategy). Blau et al. (2020) concluded that teachers who participated in professional training focusing on developing and modifying pedagogical approaches with the specific intent to self-regulate found an increasing level of motivation, performance, and self-efficacy when designing curricular elements for improved professional competencies.

Training and development of SRL as a learning strategy for educators must be collaborative between lead and novice teachers to find curricular commonplaces such as subject matter, pedagogical successes, and common instructional goals. These efforts are most effective when developing learning designed by tasks, not knowledge (Peel, 2020). The connections of everyday situations within the educational environment and practical working knowledge of pedagogy, rather than theory, are more relevant in supporting self-regulatory practices (Lawson et al., 2019). Applying strategies of SRL to the actual tasks, the educators need to improve the individual's self-awareness by being forced to evaluate successes and failures. When teacher groups proactively discuss work-related topics to broaden or deepen their knowledge and skills with people who have shared the same experiences, new cognition can develop towards a more permanent learning attitude (Blau et al., 2020).

When developed within a practice-driven domain of social learning amongst teachers, improvements are most effective and produce an elevation in cognition and motivational behaviors. Examples of collaboratively social learning practices could include connecting over the content or similar pedagogical approaches or classroom management experiences. The

exchange of feedback amongst teachers with similar pedagogical needs fills a gap in the self-regulatory path that translates educational theory into practice. Importantly, Vrieling et al. (2019) noted that for collaborative social learning to be an effective practice, it should be facilitated by an expert in the area in the process of development during the collaborative meetings. The facilitator, often a mentor teacher in either content or instructional expertise, should organize the creation of curriculum materials and pedagogical procedures into the domains of self-regulated learning, forethought, performance, and self-reflection. A 109 student-teacher sample completed Likert surveys to analyze learning strategies and attitude perceptions of academic proficiency with and without social learning in SRL in a mixed-methods study. Analyzed by an ANOVA, a significant change from pre to post-test indicates improved performance in self-regulatory skill sets after targeted training,  $\Delta=.53$ , compared to those without SRL support (Ganda & Boruchovitch, 2018). Evidence from aligning procedural knowledge of self-guided SRL development to scaffolded SRL mentorship generates a collective pattern of practices, stimulating motivation and efficacy that do not translate into effective techniques without social learning. Corroborations across peer reviewed research of missing SRL strategies commonly reported by novice teachers provide further substantiation that SRL is an element of pedagogy that is not translated from traditional teacher training into the professional realm.

Further development is needed to bridge the gap between theories in educational textbooks and the daily professional tasks of writing, implementing, and revising lesson plans (Lawson et al., 2019). Barr and Williams (2018) report that focused training in self-reflection by experienced educators increases reflexive cognition that impacts both performance and self-reflection. In a multiple case study, four secondary teachers participated in a twelve-week professional training of SRL. Evidence from thematic interviews and observations was analyzed

with NVivo coding, which generated themes that indicate a gap in the quality of constructivism from SRL due to the lack of epistemic knowledge of making pedagogical changes. After training, 75% of participants shifted to increasing SRL utilization and reported understanding pedagogy (Barr & Williams, 2018). Three case studies derived a new resulting formula to express the relationship between training and self-regulation. New knowledge, application, and coaching in SRL are compounded to increase self-regulation for teaching practices and planning of curriculum and instruction (Lawson et al., 2019). The training focused on instructional techniques, and a more experienced educator scaffold was observed in co-taught classrooms. Entry-level teachers wrote and revised lesson plans, followed by coaching from a mentor educator accomplished in SRL. Written feedback, observations, and conferences were provided between participant and mentor before the participants submitted reflections of learned experiences in pedagogical and self-regulatory contexts. Open coding across the case studies presented significant conditions for self-regulated abilities in instructional planning, including colleague mentorship relationships and feedback.

### **Feedback and Self-Regulation**

Bandura's final self-regulatory phase is the utilization of self-reactive influences through feedback and self-assessment. Typical types of feedback include peer evaluation, informal self-monitoring, and assessment of learning goals by a course instructor (Schunk & DiBenedetto, 2020). Chawla et al. (2019) reported that in lessons designed with SRL, individuals who received a lesser frequency of feedback than the amount of scaffolded instruction were not as successful at enhancing performance. According to the findings, three phases of teacher observations found that traditional learning strategies consistently contained modeling 38.8% of instruction time, with 55.6% scaffolded content, and the remaining 5.2% is reliant on the feedback process

(Chawla et al., 2019). Chawla et al. (2019) reported that learners who can receive feedback in multiple stages throughout the self-regulated learning process are more likely to increase their academic capabilities and identify performance approaches best suited for their needs. Patterson (2019) also reports that feedback should be reconceptualized from informing learners of their results into a transition to the cyclical process of re-evaluating performance goals established in the forethought phase. When goal setting is informed by feedback, the goals become focused on the individual's specific performance level and learning needs. Progress towards goal attainment improves as the scope of needs becomes well established (Morris, 2020).

Feedback informing learners also stems from being taught to identify and utilize self-feedback cues from pedagogical experiences (van Loon, 2018). An element of the cue-utilization framework, Van de Pol et al. (2020) claims the intake of feedback for self-regulated learning can correlate with the validity of future adjustments to performance tasks in the self-regulation cycle. A within-subjects test of 21 secondary teachers addressed teacher's cue-utilization and accuracy of self-regulation. Evidence suggests that individuals cannot directly pinpoint processes that influence performance due to poor cue identification which affected regulatory accuracy (Van de Pol et al., 2020). Utilizing cues is particularly challenging for inexperienced individuals who cannot determine the elements of feedback that are directly connected to the performance goal. Earlier to Van de Pol et al. (2020), Van Loon (2018) reported that the tasks selected during the processes of self-regulated learning are inferred from familiar task experiences, as well as the ease of metacognitive processing regarding the received short-cycle feedback. Additionally, novice educators gravitate to cues selected from self-assessment relating to motivation and efficacy, rather than cognitive skills or knowledge of professional competencies (Lawson et al., 2019). Establishing a routine of selecting only performance

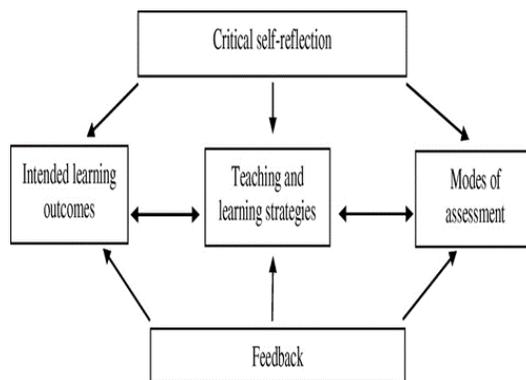
feedback that connects to feelings of positive efficacy for motivation to continue professional development misleads the inexperienced educator into a false sense of performance improvement (Taranto & Buchanan, 2020).

Challenges for self-feedback also exist with the tools educators use to monitor cues for self-regulated learning. Teachers are not using formal, quantitative assessments to monitor pedagogical effectiveness in efforts to reflect on performance experiences informing the process of the forethought phase of self-regulated learning (Van Loon, 2018). Observing a successful self-regulated educator can dramatically increase the validity of feedback selected, and how to translate feedback cues into appropriate perceptions. Semi-structured tools such as annotated notes on lesson plans, designing or working through instructional materials, notes for self-use as teachers self-learn content, and mentor/mentee opportunities with experienced colleagues are effective methods of assimilating metacognition of self-regulated learning (Van Loon, 2018).

The purpose of feedback should not be viewed as a formal assessment of an individual's progress but as a method of tracking progress and adaptive behaviors of pedagogical approaches to help the learner re-design the performance strategy approach or adjust the goal objective (Patterson, 2019). The utilization of feedback as a stepping stone on the path to modification strategies in self-regulation that can increase personal competencies is a crucial element in the effectiveness of self-regulated learning (Figure 5). Feedback is also important as a tool to identify gaps in knowledge attainment, offering insight to personal progress monitoring to engage the learner in making meaningful strides that are intentionally designed to tackle skill deficits and improve pedagogical instruction (Patterson, 2019).

### Figure 1

From “University teachers’ self-reflection on their academic growth,” by Pedrosa-de-Jesus et al., 2017, *Professional Development in Education*, 43(3), p.457 (<https://doi.org/10.1080/19415257.2016.1194877>). Copyright 2017 by Taylor & Francis. Reprinted with permission. See Appendix G.



Teacher performance and growth are gauged by the kinds of feedback they receive or feedback given to them. Clark and Newberry (2018) described feedback in education as the information that learners receive about their academic performance relative to the learning objectives. It is often aimed at improving their overall performance and helps refocus the learner to achieve the set goals. Similar to the learner outcome, teacher feedback was described by Quezada et al. (2020) as a summary of teacher performance for a given period. Jiang and Yu (2021) further described feedback received by teachers as a formative assessment used by institutions to guide teachers and inform them of their overall performance compared to the school expectations and outcomes to improve their performance over a particular period. Overall, as illustrated in figure two, feedback is meant to gauge individual performance, align teaching activities with expected educational outcomes and enhance teacher growth.

Within the professional practice of teachers, feedback is intended to improve pedagogical competencies. Pekrun (2021) conducted quantitative pre-test and post-test research with 48 teachers to investigate the effects of practice and feedback on developing teachers and found that

teachers in the experimental group reported improved performance experience in terms of knowledge and curriculum preparedness compared to those in the control groups. Poulou et al. (2018) posted similar results from the compared relationship between teacher self-efficacy and classroom practices using a sample of 58 teachers. Poulou et al. (2018) found that positive teacher feedback enhanced their self-efficacy, which improved their instructional practices and delivery. In a systematic review of literature, Darling-Hammond et al. (2019) advanced the findings of Poulou et al. (2018), reporting that positive feedback enhanced teacher resilience and improved their classroom practices and delivery. Improved classroom practices improve teacher performance, reflected in student academic outcomes.

Positive feedback improves teachers' motivation and efficacy regarding instructional delivery. As Darling-Hammond et al. (2019) established, enhanced positive feedback did not only enhance teacher resilience but also improved their self-efficacy, as illustrated by Poulou et al. (2018), and positively influenced how they delivered instructions. Comparing teachers with greater experience and efficacy in teaching to pre-service teachers, Taranto and Buchanan (2020) identify experienced teachers to have a greater utilization and receptiveness to self-regulating the development of professional competencies. Collectively, the accuracy of self-reflection improves with experiences applying feedback to the self-regulated learning phases of forethought and goal setting (Van Loon, 2018). As established by Patterson (2019) the role of feedback is only as advantageous as the cyclical reciprocity of critical self-reflection tested against new approaches of teaching and learning strategies (Figure 1).

In a systematic review of the literature with 25 articles, Margot and Kettler (2019) found that lack of support and instructional and structural challenges hampered teachers' delivery of instruction and overall performance. However, supporting teachers in terms of positive feedback

improved their implementation of STEM education, increased their collaboration with peers, and enhanced their professional development. Mandouit's (2018) quantitative research with 390 high school teachers reported that timely and positive feedback improved teacher development, performance, and overall growth. Ramani et al. (2018) advanced the above results noting that developing a culture of positive and continuous corrective feedback allowed teachers to re-analyze their skills frequently, identify areas that needed improvement and seek the necessary support to facilitate and enhance their growth. While many scholars have found that providing teachers with timely feedback improved their performance and students' educational outcome, some have argued that feedback has negatively impacted teacher growth performance. For instance, Yang et al. (2021) reported that teachers receiving feedback without support from faculty to implement the feedback, negatively impacted teacher growth. A similar conclusion reached by Wullschleger et al. (2020), whose quantitative study with 32 teachers and 546 third grade children reported that negative teacher feedback negatively influenced teacher resilience and overall performance. Congruent evidence from a quantitative study with a sample of 2384 teachers and students also concluded that negative feedback reduced the morale of teachers regarding pedagogical instruction resulting in a decline in pedagogical skill, curriculum development, and teacher-efficacy (Quesel et al., 2020).

For teachers, a mixture of metacognition and strategy in developing SRL awareness stems from feedback from the environment. The act of dual processing in self-regulation believes the environment in which learning takes place triggers the SRL technique. Learning experiences create the context of the learners' epistemic knowledge and how they approach their task in context (Panadero, 2017). Caustically, when individuals are asked to perform in the environment of appropriate context to their learning, i.e., a teacher assumes the task of revising an ineffectual

lesson strategy, feedback garnered from this exposure has greater value to the learner (Won et al., 2020). This perception is connected to the environmental factors of support within the appraisal and assessment practices of SRL utilized for competence development. Learning intentions and effects will proceed to form from the environmental context cues that can trigger or diminish the use of SRL strategies through interactions of authentic learning tasks. Within a learning environment, instructional practices directly involving social interactions can be viewed as an integrative element for development of SRL strategy (Won et al., 2019). Self-regulation's diverse competencies are experienced and developed cohesively with social and environmental influences of course content, pedagogical expectations, and colleague collaboration and feedback (Karlen et al., 2020). Continuous engagement of SRL must be actively promoted directly from pedagogical experiences, where SRL strategies can be translated against identifiable events from the learning environment. Connecting SRL practices to the value of making progress towards improving a professional competency will have positive implications for future utilization of SRL (Huang et al., 2020).

### **Self-Efficacy**

From Bandura's social cognitive theory (Bandura, 1991) stems the domain of self-efficacy theory. Self-efficacy is the personal belief of how effective the individual is in assimilating skills to task objectives. Based on the performance levels on formative and mastery tasks and sociological perspectives, there is a constant fluctuation of efficacy levels until a standard practice of self-regulation has been reached. Several contextual factors, including social, situational, and temporal circumstances, enter the collective assessment of self-efficacy. For this reason, even successful experiences do not necessarily create strong generalized expectations of personal efficacy when multiple domains of social cognition and self-reflection

are considered (Bandura, 1977). The perceived level of efficacy is also a contributing factor to the educator's motivation. The targeted performance included self-regulatory practices for teachers struggling with instructional performance while developing and modifying curriculum and instruction can improve self-efficacy (Patterson, 2019).

When performance improvement is contingent upon regulating the innovation of pedagogy for curriculum instruction, teachers want to know what variables are needed to accomplish the task. In a systematic review of self-regulatory literature, Mohammed and Mohd (2019) identified that the highest frequency variables impacting the self-regulation of performance are teacher leadership and self-efficacy, accounting for 45% of all identified studies. With the concept of leadership, the mentorship and collaboration from a more experienced teacher who successfully processes their curriculum through metacognitive practices had a significant effect on innovating behaviors in others (DeNeve et al., 2015). Mentor experiences, especially in prioritizing, making decisions, and having techniques successful in improving organizational performance, are crucial driving forces behind individual motivation (Mohammed & Mohd, 2019).

Improving self-efficacy is a practice directly connected to maximizing the effectiveness of educators in the multitude of tasks supporting classroom instruction. Efficacy is connected to cognitive-affective teacher outcomes, performance satisfaction, instructional management, and student outcomes. Efficacy is based upon the self-judgment of how successfully desired tasks were performed. Under this description of efficacy, educators' self-evaluations are directly tied to self-regulation practices, creating a context of how often assessment is taken over personal performance and to what goals that performance is measured against. With mentorship scaffolding improving self-regulation practices, teachers have also been exuding additional

personality components of conscientiousness, extraversion, and self-efficacy (Kim et al., 2019). While most self-regulated individuals are assumed to have naturally accelerated levels of conscientiousness and task completion, the measure of effectiveness is a culmination of learning the SRL strategy and intrinsic personality traits indicative of social learning (Alghamdi et al., 2020). Looking to support teachers holistically, it is the combination of professional support training of SRL, mentorship, and motivation that gains performance and self-efficacy.

Self-regulated learning processes needed to master performance objectives and social expectations are commonly researched and directed towards student knowledge acquisition within the classroom (Alghamdi et al., 2020). Teachers are only included in the conversation of self-regulated learning when discussed as the facilitator for the SRL strategy in support of struggling learners. Interestingly, while teachers identify with the importance of this technique for student success, there is a lack of pedagogical knowledge of the functionality of SRL as a component of educators' personal toolkits for improving professional competencies. Teachers are trained to recognize their students' coping needs and learning obstacles but lack a genuine understanding of how to self-regulate within their professional barriers (Alghamdi et al., 2020). In a case study focused on teacher self-regulation, teachers were found to focus on student activities using SRL strategies. Still, they could not align SRL with personal evaluations or techniques for performance or improvement (Lee et al., 2020). This shows an inability to differentiate between student techniques and their own, which is a fundamental element of being objective for curriculum development. In addition, this may provide insight into the lack of awareness of personal performance and pedagogical process orientation. Teachers' understanding of SRL has not been established within the current knowledge categories of an accomplished educator (Sun & Wang, 2020). Similarly, Bai and Wang (2020) provided evidence

suggesting that while educators may reference SRL techniques of forethought, performance, and self-reflection, they could not explicitly identify or explain the use of strategies they exhibited. This outlines a significant gap between the educational preparedness of teachers and the daily professional competencies of SRL needed for professionalism in curriculum and instruction.

Karlen et al. (2020) described the frameworks for teachers' professional competencies as linked directly to their classroom practices. Professional competencies can be traced to the individual teachers' knowledge, behaviors, and motivations (Bandura, 1991). However, the adaptation of these domains as a professional educator and how the teacher is a self-regulated learner under the weight of improving professional competencies has been ignored. It is challenging to argue why a proven process of student knowledge acquisition and reflection can increase the synthesis of knowledge and task autonomy. Still, there is a significant absence of this technique for teachers who cannot bridge the gap from basic performance skills to an accomplished curriculum portfolio and professional instructional competencies. Knowing how and why educators use strategies to improve their capabilities is alarmingly low (Kallio et al., 2020).

In the extant literature, previous scholars agreed that while there were some negative impacts of feedback on teachers' performance, most of them reported significant teacher improvement, performance, and growth, as illustrated in the preceding discussion. Like feedback, scholars have also investigated the role of self-reflection on teacher performance growth. Li et al. (2018) conducted quasi-experimental research with 14 teachers in the experimental group and 15 in the control group to investigate video-assisted self-reflection. Li et al. (2018) found that while video-assisted self-reflection improved student academic outcomes, it played an important role in improving teacher growth, performance, and professional

development as they reflected on areas that needed improvement. Thompson et al. (2019) investigated how digital simulation promoted teacher self-reflection and performance growth. For novice teachers, Thompson et al. (2019) reported that digital simulation that promoted novice teacher reflection enhanced their engagement and overall growth.

In their study, Li et al. (2018) found that video self-reflection played a critical role in improving teacher performance and growth by promoting communication and enhancing teacher-student interactions. In systematic qualitative research with 82 studies, Major and Stevenson revealed that self-reflection provided teachers with the data and information on the key areas that needed improvement, thus encouraging their growth. McCoy and Lynam (2021) agreed with Li et al. (2018) in qualitative research investigating the impacts of video-based self-reflection among pre-service teachers. McCoy and Lynam (2021) reported that video evidence and weekly video footage supported teachers' weekly self-reflection and encouraged the development of self-reflective habits among the teachers. In the discussions above, self-reflection allowed teachers to reflect on their pedagogical practices and identify the areas that needed improvement, thus enhancing their overall performance.

In other findings, Eriksson et al. (2018) conducted a qualitative study to investigate the impact of classroom feedback and self-reflection on the performance of primary teachers. An analysis of the collected data revealed that classroom assessments allowed teachers to assess their skills and areas of improvement and experience overall performance growth. In a qualitative research, Barth-Cohen et al. (2018) reiterated that teachers who practiced self-reflection identified and understood the instructional challenges that they faced and sought practices that would improve their overall performance and professional growth. Muhonen et al. (2022) found that self-reflection did not only help teachers address stress in their teaching

profession but also improved their delivery of content reflected in their performance growth. As such, when used correctly, self-reflection and feedback enhance teachers' performance and growth.

Self-regulation targets a shift in metacognition, taking the professional challenge of instructional design from a reactive exercise into a proactive process. To conclude, with substantial evidence supporting the process of self-regulation as a defining factor in performance improvement, there is no substantiated or standardized accord of the process for self-regulating teacher pedagogical improvement (Xu & Ko, 2019). The identity of the specific structure of forethought from the perspective of teachers planning lessons with specific content and pedagogical intentions and structured mentorship procedures that can be utilized daily as assessment feedback of instruction performance is underrepresented. Providing the research opportunity to investigate the collaborative community of teachers supporting each other while receiving scaffolded pedagogical support throughout standardized self-regulation can re-invigorate teacher professional training and competency of instruction.

### **Summary**

Self-regulated learning represents a metacognitive technique that can increase individuals' ability to process their social and academic skills in conjunction with their environment (Usher & Schunk, 2018). While a respected theory generated by Albert Bandura in the late 1960s established social learning theory, self-regulation branches off from the concept that the social expectations of respected peers can create levels of motivation, performance, and efficacy for a specific goal (Bai & Wang, 2020). With much of the focus on self-regulation strategies applied toward primary and secondary students, research has forgone how teachers' use of self-regulated learning can support the task of improving pedagogical performance within the

classroom (Wang & Chen, 2020). While teachers in our classrooms recognize the importance of personal progress to increase effectiveness, educators are rarely trained in the technique. Process strategies such as goal setting and concept mapping begin the stages of growing metacognition for the needed areas of instructional modification and are yet largely unpracticed by novice educators (Chawla et al., 2019). Supporting teachers in their efforts requires professional training and collaboration from expert teachers and curriculum leaders experienced in self-regulation. Active learning of the SRL processes provides scaffolding and modeling of regulatory practices, increasing the likelihood of successful utilization of the techniques and continued progress towards the teachers' original goal (Wang & Chen, 2020). Individuals who involve themselves in this development process have been found to increase the effectiveness in their teaching position and have improved levels of self-efficacy parallel to performance enhancement. The processes and perspectives of educators involved in curricular and instructional practices must be provided with specific evidence of SRL techniques that are effective in improving professional competencies. Existing literature revolves around SRL as a foundational practice for K-12 learners developing skills of metacognition for goal attainment (Usher & Schunk, 2018; Wang & Chen, 2020). Analyzing SRL from the viewpoint of an educator is rarely found in academic literature. The significance of this study is the approach of observing how educators perceive the components of SRL as a tool while developing professional competencies for personal growth, rather than student success.

## **CHAPTER THREE: METHODS**

### **Overview**

The purpose of this case study was to describe the elements of self-regulated learning utilized by a dichotomy of teachers in RAMS rural school district navigating the process of improving instructional pedagogy and self-efficacy across K-12 standards. The problem is that entry-level and developing teachers are failing to learn how to effectively improve pedagogical techniques within the first five years of professional evaluation (Karlen et al., 2020; Peters-Burton et al., 2020; Vrieling et al., 2018). A multi-case study design is utilized to observe and interpret teachers' efforts in curriculum and instruction in their natural environment with methodological congruence. K-12 teachers in a rural school district participating in open-ended interviews and observations provide documented evidence used to showcase their perceptions of self-regulation amidst professional curriculum tasks. Under the lens of social constructivism and the interpretive framework of pragmatism, layers of evidence of the impact of SRL in a teachers' process of pedagogical improvement and self-efficacy are aggregated and synthesized to triangulate patterns of barriers and successes in SRL utilization. Additionally, this chapter includes the details of the ontological, epistemological, and axiological assumptions that are applied to the research design of a multiple case study. Data collected from interviews, documents, and observations were synthesized to understand teachers' perceptions of self-regulated learning strategies for personal growth.

### **Research Design**

Qualitative research represents a set of interpretive practices that makes the world visible through a lens that describes a naturalistic experience as meaningful (Creswell & Poth, 2018).

Beginning with assumptions and theoretical frameworks to inform research problems, qualitative research interprets and makes sense of phenomena in terms that are relevant and significant to people interacting with them (Denzin & Lincoln, 2011). It emphasizes episodes of the uniqueness of each individual and the wholeness of the individual (Stake, 1995). With the crux of qualitative research methodology centered upon the lens of the individuals experiencing the phenomenon in their natural context, a case study becomes aligned with the focus of the study and the qualitative methodology selected. For the purpose of this study, it is imperative to showcase the diversity of perspectives from a heterogeneous group of educators. Exploring the case scenarios of a comprehensive set of participants portrays evidence of self-regulated processes from each participants perceptive lens via contextual analysis of observations, documents, and interviews. Significant analysis of each case, and the contextual analysis of the cross-case synthesis offers potential to add to the complexity of our understanding of self-regulated learning from the perspective of educators.

A case study can focus on an individual, small group, or community with a relationship or issue that can be observed and analyzed in a contemporary context by multiple sources of information (Creswell & Poth, 2018). Originating from the practices of medicine and law review, bounded scenarios that can be analyzed through parameters such as time, location, and population group can donate new information in the context of a relevant theory (Creswell & Poth, 2018). Well-designed case studies attempt to illuminate the process of decisions made regarding a particular phenomenon. Why decisions were made, how they were implemented, and the result of each is successful investigative boundaries of a case study that can expose connections between the phenomena and the context of the environment (Yin, 2014). Case studies explore participants daily experiences in their natural settings (Yin, 2014).

To explore the perceptions of teachers' self-regulatory practices, a multi-case study design draws on phenomenological methods to replicate a logical process in a participant's environment to generate connections to an established theory (Stake, 1995). A multiple-case approach offers a robust data collection and analysis scope to control the validity and reliability of observable evidence within the study (Yin, 2014). This approach allows educators to contribute evidence from multiple sources into triangulation processes in cross-analysis to display the uniqueness of each case within the study (Stake, 1995). With various perspectives, conditions of data analysis are improved by additional resources to contribute to pattern identification of what is common or unique to site-specific experiences contributing to evidence-based assertions and theories that can influence the lens of the phenomenon (Stake, 1995).

### **Research Questions**

Research questions form the foundation of any qualitative study (Creswell & Poth, 2018). In addressing the perspectives and experiences of multiple individuals, the questions presented in this study are intended to be semi-structured and open-ended. This format has been chosen to elicit the most honest and unguided responses from participants, increasing the scope and validity of the data to be collected (Yin, 2014). Participant responses to the posed questions may also guide the course of this study, allowing for new, significant data trends to be explored.

#### **Central Research Question**

What are teachers' perceptions of self-regulated learning strategies in personal pedagogical growth?

#### **Sub-Question One**

What are the perceptions of K-12 teachers of using self-regulation to analyze pedagogical performance in the classroom?

**Sub-Question Two**

What are the perceptions of teachers on the importance of self-regulation as they are tasked with pedagogical restructuring?

**Sub-Question Three**

How does the perceived value of the self-regulated learning strategy influence K-12 teachers' self-efficacy?

**Setting and Participants**

The selection of the setting and participants in a multi-case study is a task that must specifically target the environment and individuals that have the most exposure and insight into the context of the research problem (Creswell & Poth, 2018). From the initiation of the invitation to join the research study, participants must be safeguarded by the study design, protecting all aspects of data, identification, and attrition from the problem environment. An additional focus of this process is to return valuable data and results to the study participants as a value-added component of their time and efforts (Creswell & Poth, 2018). The participants of this research study were the backbone of all data and findings, as they represent the typical population of educators in public school systems.

**Site**

A multi-case study investigating teacher perceptions of self-regulation regarding the design of curriculum and instruction was best suited for the educators' natural environment, the school setting. RAMS (a pseudonym), a K-12 public school system in a rural community in Ohio was selected for its access to over 52 diverse certified general education staff who serve a collective of 975 students across the grade levels (REVSD, 2021). Distribution of the staff demographic offers equal opportunity to access teachers at all performance and experience

levels. With certified educators serving as the population for a maximum variation sample, staff availability at this site is greatly varied regarding experience, education, and evaluated performance levels providing a wide range of perceptions of SRL for data collection (Flick, 2018). The range of educators offered at this site offers increased validity for triangulating evidence of novice and experienced educators in developing content-based pedagogy. With an average of 14 years' experience, 100% of available educators have a bachelor's degree, 60% hold a master's degree, and 100% of practicing teachers are currently serving in their certified licensure area. Of this 52-sample group, 15.2% of accredited staff rank as inexperienced educators, indicating two or fewer years of classroom experience, ineffective ranking on the teacher evaluation system, or both (Ohio Department of Education, 2021).

For the district, state standardized student performance scores have failed to pass proficiency measures for the last ten years (ODE, 2021). Addressing this issue, school leadership, including the superintendent, principals, and educational service coordinators, promote teacher improvement efforts with an authoritative top-down leadership structure. Each year, staff are presented with opportunities for professional development in their respective content areas and student management systems to maintain relevancy with modern techniques and the requirements of the Ohio improvement process that can be applied to the student population's needs. In addition, building leadership maintains compliance with the Ohio Department of Educations (ODE) resident educator mentorship program, which matches teachers with less than five years of teaching experience with a mentor teacher for scaffolding support of instructional techniques. This process would allow entry-level educators to be exposed to a variety of curriculum design processes and methods of personal evaluation, providing exposure to the process of self-regulation.

## **Participants**

A twelve-teacher sample was selected from volunteer participants at RAMS as the minimal sample size required for expected data saturation in a multi-case study (Creswell & Poth, 2018; van Rijnsoever, 2017). Saturation is an element in securing future data heterogeneity. Enough data was collected to ensure no new information is needed, as the population selected has provided all data angles (van Rijnsoever, 2017). It was imperative that the participants of this study created the data saturation desired. The maximum variation sample was drawn from different teacher groups of diverse perspectives in the mathematical, language, science, STEM, special education content focus areas, diversity in the number of years of experience, and state accreditation and evaluation rankings.

All participants must have completed the base undergraduate degree in a field of educational instruction with Praxis for valid state licensure, in addition to a participatory role in the mentee/ mentor process within academic cohorts facilitating new district teachers. Utilizing a maximum variation sampling within this district represents the extreme range of self-regulation perception across novice to experienced educators, maximizing the relevance and validity of data (Flick, 2018). Sampling from a range of positionalities addresses the conceptual framework of educators socially constructing metacognition. Examining a complete heterogeneous sample of data from twelve educators at all stages of pedagogical accomplishment and professional competencies increases the depth to which self-regulated learning can be explored in the context of the duality of teacher and learner.

## **Researcher Positionality**

The researcher's positionality is a pre-determined philosophical perspective of how individuals process their worldviews and why and how knowledge is constructed (Creswell &

Poth, 2018). When the researcher follows their assumptions as of the basis of an interpretive lens, it translates into the procedures of how to study problems based on socio-cognitive knowledge construction (Denzin & Lincoln, 2011). The desire to understand why people make decisions and how understanding is developed on behalf of educators looking for improvement drives the constructivist framework of this study. The belief that knowledge is not neutral but rather is shaped by the chassis of experiences drives the positionality of approaching data and results from educators at work within their professional competencies.

### **Interpretive Framework**

Introduced to American culture in the late 1800s, naturalists such as John Locke and Dewey assimilated the pragmatist framework into psychology, sociology, and education (Creswell & Poth, 2018). The curiosity of naturalists and constructivists as to why people insist on doing things and using processes that do not work has maintained its consistency as a theme of exploration across various disciplines (Sharma et al., 2018). From the interpretive lens of a pragmatist, exploring this classic question of why people make their decisions and insist on select courses of action is encouraged by the approach to seeking out solutions that are not attached to any one philosophy (Creswell & Poth, 2018). In the field of education, teachers are consistently faced with change. As expectations change, what works will also change. Pragmatism coincides with the fluidity of change necessary to keep up with effective educational practices. The truth of what works for teachers is entirely subjective to the social and historical context of the moment and the school environment. What is important is the problem being studied within this context and the questions asked about the problem (Creswell & Poth, 2018).

Pragmatists construe knowledge as a function of the experimental experiences of the individuals themselves (Sharma et al., 2018). Through this lens, experiences involve flexibility

and adjustments to be made on behalf of the individual as they interact with different scenarios, constructing new understandings of their experiences. Studying these changes allows the researcher to focus on the actions that promote individuals' progress in their environment rather than the ideas of what could be influential. The pragmatist approach of Dewey linked this process to the social actions and processes experienced through individuals thinking along correct pathways and improving self-awareness through decisions and actions regulated and collaborated amongst colleagues (Palvis & Gkiosos, 2017). When education is in action, it enhances the growth and development of the individual within their environmental lens, increasing the meaning of the truths exposed by the research study (Sharma et al., 2018).

### **Philosophical Assumptions**

In qualitative research, the investigator must aspire to present the multiple realities of participants from a variety of angles to showcase how knowledge has come about (Creswell & Poth, 2018). Participant values, the nature of their realities, and what constitutes knowledge inform the researcher's interactions with the participants' beliefs.

#### ***Ontological Assumption***

In education, the concept of a one size fits all approach to any context is unrealistic. My ontological assumption is that there are multiple view contexts to reality. While an individual's worldview and experiences construct their perception of reality, it is measurable and observable. The researcher must approach educational research by embracing the potential of multiple and different realities existing for diverse groups of individuals. The responsibility on behalf of the researcher is to report the multiple realities expressed by the participants in each case observed to present the most holistic view of the research outcomes (Creswell & Poth, 2018). Reporting multiple realities begins by ensuring the population from which the population sample is selected

pulls from a heterogeneous collection of experience levels and instructional content domains. This allows multiple forms of evidence during the research study, generating themes taken from various individuals in the studied environment and presenting different perspectives. The researcher must accept that the evidence presented by each participant is true; allowing personal biases and theories to be malleable with the reception of new insight is how educational theory can progress. Presenting the actual words and documents presented during research without altering their original context to fit the researchers' reality supports the ontological assumption.

### ***Epistemological Assumption***

From an epistemological perspective, researchers attempt to get as close to the participants and the evidence of the study to experience how knowledge has come to be understood as significant and important knowledge (Creswell & Poth, 2018). Experiencing first-hand what the participants of the study experience in the context of their classrooms and collaborative opportunities with colleagues lessens the distance between the information description during interviews and observations and what the researcher can identify as fact. In this sense, with the researcher assuming such a close role in the problem at hand, the researcher also becomes a source of expertise in evaluating the evidence presented during the study, adding validity to the research. My epistemological assumption is that knowledge and ability are not synchronized until the individual has passed the test of experiences guiding self-construction. Many educators believe that upon completing all teacher-service courses, or even the first year of classroom teaching, they have effective knowledge of pedagogical tasks. Knowledge must be skills accumulated and modified from successful and failed experiences, actively self-constructing a higher level of applicable knowledge that can translate into self-regulating performance improvement.

### ***Axiological Assumption***

The axiological assumption represents the recognition of any biases on behalf of the researcher that would be showcased within the study from personal or professional experiences (Creswell & Poth, 2018). My axiological assumption is that participants' perceptions and observations of their actions during curriculum planning and instruction will be highly interpreted by the researcher and presented. There is a significant positionality of the researcher in this study, who has experience in curriculum, education, and mentorship roles where self-regulation has been an essential factor in successful pedagogy. The current paradigms of self-regulation from the researcher were compared and applied to the context of the narratives shared by the participants of the case study, influencing the analysis of the use of SRL in the development of curriculum and instruction.

### **Researcher's Role**

The case study researcher should serve as an interpreter of participant perceptions and a co-creator of knowledge exposed from evidence (Creswell & Poth, 2018). As a colleague of the participants, I have assumed the same responsibilities of individual and colleague support in content and pedagogical development to improve personal practices in each academic year. In the cases of several randomly selected participants, I have worked closely with them in the prior context of discussing their pedagogical strengths and weaknesses and offered personal experiences as insight. For other participants of the study, I have not had the opportunity to observe their professional competencies or desired performance levels, only having shared the professional tasks of needing to produce rigorous professional pedagogical competencies for classroom performance and administrative evaluation. Having this shared experience assumes that all educators, regardless of experience or performance, have the needs and desires to utilize

self-regulated learning to reflect on personal techniques and generate motivation for curricular modifications. As the lead researcher, my role will shift from collaborator to observer, collecting and cataloging multiple forms of data to analyze trends in perceptions of SRL techniques on performance improvement. The interaction of the participants and the researcher often generate important data relevant to the study. Researcher insight within participant interaction leads to constructivist and interpretive connections of the data and the revelation of new evidence (Harrison et al., 2017). Data analysis must include the researcher's observations and field notes during the investigation of the case as participant behaviors and actions exhibit meaningful contributions to the patterns of data influencing the propositions of the case (Yin, 2014). Setting aside personal bias regarding the dependency of SRL elements must be a premise of the research boundaries of the researchers' role in the case. As the researcher is the human instrument during the interview and observation phases of the process, the researcher's familiarity with the participants requires self-reflexivity, understanding the personal connections to the experiences that educators take on each day and in preparation for their daily performance tasks (Holmes, 2020). While the researcher believes to have a high level of understanding of these tasks, the contextual belief of how self-regulated learning should be used must be concealed to allow the participant to provide their views with the researcher's influence or personal view in each direction.

### **Procedures**

The researcher is responsible for the engagement, involvement, and protection of all research study participants. Participants as volunteers were aware of all personal liberties and guidelines of the study, including collecting and presenting data. Data were collected through the

formats of interviews, observations, and documented evidence before being evaluated for categorical patterns that were presented in logic models.

### **Permissions**

Permissions included the Institutional Review Board (IRB) approval of Liberty University (Appendix A) to collect participant data from the K-12 district site, accompanied by the site permission letter to allow access to information and documented evidence of certified staff (See Appendix B). Obtaining the participation of volunteers of legal age required a consent form for each individual providing collected evidence within the multi-case study. The consent form (Appendix C) documents study requirements, participants' roles, confidentiality and price procedures, and their right to withdraw from the study. Additionally, the participant agreed that information provided during interview responses, observations, or document artifacts may be used in the final publication of the research study. All information given by the participants will remain confidential to the originating individual, presenting minimal risk to their role as an educator. Data collected will be stored offsite further to ensure the anonymity and protection of each participant.

### **Recruitment Plan**

The sample pool from the RAMS district provided a sample population of K-12 certified educators with healthy heterogeneity of teaching experiences. Limiting the sample pool to within this site, Creswell, and Poth (2018) supported that those experiences presented by the participants will have an increased validity and authenticity, as their actions and reactions to the research problem stem from direct interactions with the environment in which the problem exists. To ensure the most comprehensive observation was conducted on teachers' perceptions of self-regulation, sampling for the multiple case study was based upon the personal attributes of

the group, such as gender, education, and occupation (Flick, 2018). With the research site offering this diversity, sampling of participants promoted inclusiveness of perspectives that improved the context in which self-regulatory practices can be observed and reported. A sample of twelve participants was collected from the site pool, over the minimum of ten suggested as a guideline for qualitative case studies (Creswell & Poth, 2018). After the initial cases have begun, adjustments were allowable during the remainder of the research study to add participants who may increase the depth of observable evidence at the site (Flick, 2018).

To attain this population, I enlisted purposeful sampling with maximum variation across the K-12 educators at the sampling site. Purposeful sampling is a prepared sampling technique that adheres to specific criteria to obtain knowledgeable participants on the studied phenomenon to offer detailed information that may inform the problem and purpose of the research study (Frey, 2018). Purposeful sampling selected teachers who meet the qualification criteria of content certification and teacher education program certification from an accredited university and have experienced collaboratory pedagogical development practices within the district's content and entry-level mentorship mandates. A substrate of the purposeful sampling technique included a maximum variation of the final selected population. Educators were qualified by possessing differentiated levels of classroom experience and the teacher's evaluation system assessment. Assembling a heterogeneous population elevated the perspectives gathered toward the main problem and maximized the relevance of data (Creswell & Poth, 2018; Flick, 2018). Increasing these differences at the inception of the study not only increased the opportunities for additional data sources but also added layers of context to the study by allowing for the investigation of individual participant perceptions, as well as the triangulation of overarching patterns across the multiple cases (Flick, 2018). To gain qualified participants, a list of the

certified general education staff was used as a tool for purposeful sampling of a balanced array of teacher experience levels. Names were first be sorted by individuals with less than five years' experience and those greater than five years. A random sort scrambled each named category, and six names will be randomly selected from each category to avoid bias of content area specificity of professional competency (Flick, 2018). Chosen individuals were contacted through an invitation email, depicting the purpose of the study, its' voluntary status, and the value of the anonymous data to benefit the teachers presently working in the district. After one week, participants were considered invested or non-participants before finalizing the participant roster. All participants of this study were required to sign a contract of consent with the researcher, granting permission for personal narratives, observation notes, and document evidence to be showcased within the researcher's dissertation (See Appendix C). Identifying information for each participant was removed from the study, reducing bias and discrimination of participant responses or reactions from colleagues upon publishing the study. During the research process, participants have the right to withdraw from the study without consequence.

### **Data Collection Plan**

Data collection in a qualitative case study can incorporate a variation of elements and approaches within the participants' natural lens. With various formats, important data can be collected as a strategy of inquiry not determined by specific methods but rather by the parameters of the case themes (Creswell & Poth, 2018). A three-stage process of diverse data collection can best gather a holistic view of the research participants' perspectives of personal self-regulatory techniques. Gathering evidence from multiple sources increased the opportunity to link data to the base proposition of effective strategic patterns of self-regulation in curriculum development and the ability to examine alternate explanations of educator patterns within the

data (Yin, 2014). Beginning with individual interviews, document analysis, and participant observations, each data collection approach added substantiality to the context across the cases in terms of patterns of self-regulatory techniques showcasing differentiated levels of perception, value, and use of the strategy during pedagogical design and revision.

### **Individual Interviews**

Guided conversations as interviews rely on the participants' verbal expression of their perceptions to create the foundations of evidence regarding the research problem (Creswell & Poth, 2018). Interviews in qualitative research are based upon a carefully scripted structure to bring about evidence related to the theoretical perspective being investigated without coaching primary responses. The researcher's role of posing questions in a specific scope and sequence pertinent to the fundamentals of the phenomena prompts responses of the pure experiences of the participant, generating quick and reliable data (Marshall & Rossman, 2014). During the interview process, the researcher conveyed the approach that participant contributions were inherently valuable, regardless of the content or context of the posed question. Conducting open-ended interviews allows flexibility for interpreting the context of interview conversations and their application to the fundamental theories of the research problem (Lincoln & Guba, 1985).

Individual interviews were conducted at a neutral, mutually agreed upon location or via a digital streaming meeting platform for this case study. Questions asked prompted participants to their perception of self-regulated learning regarding their personal use in developing curriculum and instruction for improving performance in the classroom. Each interview was audio recorded with additional field notes to supplement details and visuals that are not sufficiently documented by the audio recording. Beginning with a grand tour question to invite the participant to open the

lines of communication, semi-structured interview questions based upon the pre-determined question list were asked of each participant (Marshall & Rossman, 2014).

### *Individual Interview Questions*

1. Please describe your typical lesson planning session. CRQ
2. Please explain the process of how you measure the success of your classroom instruction.  
CRQ
3. What are the most challenging aspects of designing a successful lesson? CRQ
4. Describe your best approach for improving a lesson that was not successful. CRQ
5. Please talk me through your thoughts/ experiences of how you work through your lesson improvement process. CRQ
6. How do you decide if an element of your curriculum or instruction needs to be modified?  
SQ1
7. Please describe the process you use when reviewing your classroom performance. SQ1
8. Describe the process of modifying an unsuccessful lesson component. SQ2
9. What do you perceive to be the best strategies or steps to follow as you navigate the process of lesson planning? SQ2
10. Please describe the role feedback has in your lesson design or delivery process. SQ2
11. When you develop curriculum, what elements of the design process provide feelings of positive self-efficacy? SQ3
12. What experiences with your professional mentorships have positively impacted your ability to self-regulate? SQ3

The presentation of interview questions to each participant of the multiple case study is to

assist in identifying and describing consistent themes for teachers self-regulated learning processes while attempting to improve professional competencies. Based on the theoretical framework of constructivism, each question is designed for the participant to express their viewpoint of action steps in attempted lesson planning activities. Question responses that can be applied to the cyclical framework of the SRL stages of forethought, performance, and assessment to inform understanding of socio-cognitive development of SRL for the duality of teachers as learners.

### ***Individual Interview Data Analysis Plan***

Interviews were transcribed using an external expert from Rev.com. Transcripts of the audio-recorded interview are then processed with inductive data analysis, which is more likely to identify influences of constructs that have mutual interactions with the overarching theme of self-regulation (Lincoln & Guba, 1985). Embedded data analysis broke down the transcript data to identify the multiple realities presented by each participant to be organized into specific elements of self-regulation domains (Stake, 1995). Analyzing the aspects of the cases related to self-regulation began with value coding of participant responses. Value coding utilized values, attitudes, and beliefs as the three constructs of the research problem (Saldaña, 2011). Values are important details considered important to the participants, consistently reappearing within the transcript of interview responses across multiple cases. Participants' attitudes and perceptions are identified as evaluative measures of themselves within the context of self-regulative processes. At the same time, participants' beliefs can be considered tasks necessary in the design/redesign process of SRL, given expressed reasoning for actions based upon personal experiences (Saldaña, 2011). Coding of themes and sub-themes in the perceptions of self-regulation was correlated and categorized using MAXQDA.

The categorization of codes derived from the interview questions prompting participants for steps of lesson planning, decisions, and action steps taken as they self-assess and modify performance was individually sorted and used to identify key thematic issues of self-regulation and its precepted value. The first step in this process began by reading through each interview and applying codes for the stages of SRL to specific terms or descriptions of action steps (Yin, 2014). For example, participants who describe writing out a lesson plan participate in the process of forethought, which holds its coding category. Creswell and Poth (2018) discuss the critical step of transitioning the coded information into an outline visual or verbal data format. Theming can add a structure and organization to coded groups, identifying new categorical aggregation levels to the data. Saldaña (2011) parallels this follow-up to the coding process, including the use of additional structure by using superordinate and subordinate levels of coded groups, further detailing the connections amongst data sets per participant case, increasing the likelihood of significant pattern identification. In the case of this research study, superordinate groups represent the main domains of Bandura's (1989, 1991) stages of self-regulation: forethought, performance, and reflection. Subordinate coded groups formed within each main domain include practices indicative of each domain, such as goal setting, collaboration, feedback, self-assessment, and the cyclical reciprocity of these actions.

### **Document Analysis**

Document analysis consists of the collection and analysis of personal, public, or organizational documents relevant to the participant's experiences within the research problem (Creswell & Poth, 2018). In this research study, organizational records from the uniquely individualized lesson planning process of each participant were cataloged by the researcher. Documents may include but are not limited to memos, graphic organizers, lesson plans, and

annotated notes presented as physical or digital records. These documents were procured during each participant's lesson planning process. Collecting the personal documents of each participant allowed the researcher to analyze the individual decisions, assessments, and modifications made during the lesson design process and the connections to the stages of self-regulated learning.

### ***Document Analysis Data Analysis Plan***

Creswell and Poth (2018) described qualitative data analysis amongst various participants with the successful form of pattern matching in a cross-case synthesis. When a researcher studies multiple cases, information from the individual documents can be arranged and displayed in synchronous themes to create a framework of similarities and differences amongst the cases (Creswell & Poth, 2018; Yin, 2014). Erlandson et al. (1993) described a foundation of making naturalistic generalizations with typical and divergent data that can increase the scope and range of evidence supporting the themes of the research problem. All subjects of an inquiry study are connected by interrelationships that shape the problem and the solution to the problem. By synthesizing patterns within the documents across many cases, the researcher can generate an intricate understanding of the problem's context and make predictions of the connections to substantial theory (Erlandson et al., 1993). Yin (2014) detailed the process of creating a cross-synthesis of an embedded unit analysis with the practice of descriptive coding to assist in pattern matching from documents. Pattern matching of self-regulatory techniques was implemented from documented pieces such as graphic organizers, concept maps, lists, editing stages, etc., generating multiple visual or linguistic patterns per data set that can then be clustered and categorized into categories of SRL. Unifying common words or phrases within the documents or images drawn onto documents during the revision process were cataloged as descriptor themes and sorted into the superordinate categories of forethought, performance, and self-assessment.

Minority responses were sorted into subordinate groups. These thematic patterns contributed to sorting the data initiated by the interview responses as a collective holistic analysis of the patterns of decisions and behaviors associated with educator processing within the realm of self-regulated learning.

### **Observations**

Observation of each participant took place during the task of lesson revision. Creswell and Poth (2018) described observations as the act of noting phenomena in the field of interest through note-taking structures and analyzing to add context to the research problem and questions. For this case study, the researcher served as a non-participant observer, watching over the lesson revision process while gathering and recording significant data (Creswell & Poth, 2018). Observing and notating the process of each participant's self-regulatory methodology during a professional competency task provides an opportunity to perceive the viewpoint of the utilization of SRL techniques from the internal context of the issue rather than a delayed reflection of the process (Yin, 2014). Participants were asked to narrate their decisions and actions as they work through their process of revising a content lesson plan. A standardized observation notes template was utilized by the researcher to inscribe field notes of observed events and behaviors into an organizer containing categories of the stages of self-regulation. This process allowed the researcher to create anecdotal notes during the observation about the narration of the participant, as well as behaviors and processing cues of the superordinate and subordinate categories of SRL that have been established from the initial participant interview. In the context of this research problem, observing the events that have the potential to utilize various components and levels of self-regulation was a necessity for personal self-regulation.

Evidence can showcase the process of self-regulation and assessment, recognizing when pedagogical goals have been met or achievement gaps yet to be crossed.

Observation protocol is established before the observation experiences. Observation protocol allows the researcher to interact with the participants, but not in such a manner as to alter the natural course of action during the lesson design process (Harrison et al., 2017; Hays & Singh, 2011). The observation of participants in their naturalistic processes and environments is recorded to apply to the research problem analysis with the researcher's use of reflective and descriptive field notes. During the scheduled observation of a participant, field notes were generated as written records of participant behaviors to describe details and events and participant reactions and responses to their design process (Hays & Singh, 2011). These notes can include behavioral descriptions, paraphrasing of actions, summaries, and specific quotes used by the participants throughout the process. In addition, reflective notes can be later added as a collective of researcher insights and inferences that may be viable in connecting behaviors to the content theory informing the research problem (Creswell & Poth, 2018).

### ***Observations Data Analysis Plan***

Analysis of participant observations was conducted by assessing the interpretations of the observed evidence recorded as analytic memos and process coding in conjunction with the physical document of the participant created during the lesson provision process. The culmination of these data sources was sorted into a logic model to match observed actions and events to the theoretical constructs of the stages of self-regulation. The logic model stipulates and operationalizes a complex chain of events staged in cause-effect patterns (Yin, 2014). Mapping the process events and evidence of the participants' perceptions throughout the transitions and revisions of the curriculum development task can assist in the identification of

trigger events that produce a specific pattern of actions or outcomes consistent with specific stages of SRL. Lincoln and Guba (1985) stated that this process of seeking out the key moments in lessons that initiate the experienced teachers' self-regulated revision instinct could become a learning model by displaying the actions of both the creative and critical components of analysis. The logic mapping process outlined Bandura's (1989, 1991) domains of self-regulated learning: forethought, performance, and self-assessment. Significant thematic patterns representing each domain were arranged according to category. Interpreting observational data involves the carefully standardized judgments of what is meaningful from the participants' actions and language, deriving themes and patterns to create a larger meaning from the data involved (Creswell & Poth, 2018). In this approach, the researcher can interject their personal insight and intuition of SRL participant transitions within the evidence to create the logic model thematic categories (Yin, 2014). The researcher can now add interpretations of participant behaviors and processing cues into the classes within the logic model, adding to the context of the participants' ontological, epistemological, and axiological perspectives. Cyclical events are also added within the flow of the logic model, showcasing the thought processes and choices of the educators as they recognize specific targets of their pedagogical approach in which to interject the techniques of SRL. Utilizing the logic model as a tool for the triangulation with data provided by the observation, interview and document data sets provides synthesis for representing significant patterns identified in teacher perspectives of SRL in professional competencies (Saldaña, 2011).

### **Data Synthesis**

Integrating the data procured from participant interviews, observations, and documented works created a greater conceptualization of the lens of educators' self-regulation. The synthesis process began by converging the significant themes from each domain of evidence and collating

them into synchronous sets of data under the umbrella of proof of the patterns of self-regulation in teachers' processes of curriculum modification. The process of categorical aggregation originated with a holistic analysis. The researcher focused on the key issues of self-regulation, targeted explicitly within the curriculum design and revision processes. Organizing the data into common domains of Bandura's (1991) theory of self-regulated learning, materials modification, pedagogical modification, self-assessment, and motivation was taken from the participant interviews, observations, and documents. Synthesis of the directly presented materials from participants and the research insights of behaviors and actions during the interviews, observations, and documents included sorting all physical evidence, participant records, and anecdotal researcher notes into the SRL domains. These highly referenced categories created the outline for the systematic review of data, where participant evidence was traced for interconnectedness and influence on targeted areas of self-regulation (Hannes & Lockwood, 2012). Patterns sought from all sources of evidence included the context of the actions and choices of participant revisions and performance activity selections, high frequencies of phrases or actions, including common locations within the design process generating events of cyclical interchange, or the domain destination of the action of cyclical reciprocity. Connections are mapped in the logic model format, showcasing the culmination of all patterns generated by participants and highly-trafficked areas of the SRL pattern.

### **Trustworthiness**

Trustworthiness between the researcher, participants, and research site is a critical foundation for the benefits and usefulness of forthright data that can reciprocate participants' investment for their personal and professional benefit (Creswell & Poth, 2018). Having a confirmability of a neutral approach as the researcher eliminates the bias that may jeopardize the

credibility, transferability, and dependability of the study. Participants and their needs must be ethically considered and accounted for to preserve the rights and safety of the individuals whose environment you are attempting to improve and generate an added platform from which to present a newly visible issue.

### **Credibility**

Lincoln and Guba (1985) described credibility as the extent to which the research study is believable and appropriate for its social context, as perceived by the audience intended to take value from the study. Additionally, it also references the mutuality of the study participants and the researcher's cooperation to produce valid and meaningful results. Credibility for this research study stems from the foundation of highly recognized academic theories of self-regulation and social learning (Bandura, 1986, 1991) to inform the categorical domains of data. Each data analysis technique is also based upon credible resources in the research community, having been represented in over one hundred published research studies. The researcher also established credibility by having a prolonged engagement within the research site, where all contributions of data and the participants themselves will be protected. Additional credibility was established by presenting a research design that can be recreated in future tests with data validation through triangulation and member-checking.

### **Transferability**

The ability for the evidence of this research study to apply in other contexts or remain in education to alternate domains and times refers to the transferability of information produced by the participant's data and researcher's conclusions (Lincoln & Guba, 1985). Context derived from this research study in the areas of self-regulated strengths and weaknesses of professionals amid the design and assessment processes can be translated into professional arenas and education.

While easily transferable to the research arena of designing instruction for student use within the classroom, applications may also translate to the university level or students with special needs. Elements of colleague support and training may also impact training programs' engagement and support factors utilizing tools for generating growth measures and structured systems for performance improvement. Using intensely described observations, interview transcriptions, and documented analysis in thick, richly descriptive language increased the transferability of substantial connections of self-regulatory supports into other professional contexts. To achieve a fluid transferability to future research, samples of each participant's data (not including participant identifiers) are presented within the published results of the study. Direct quotes of the rich language choices that have informed the researcher's inferences are included. The original documentation includes participant annotations to convey the realities of each participant's perspective to the reader.

### **Dependability**

Dependability in research is replicating the research study and its findings (Lincoln & Guba, 1985). The purposeful sample of a diverse, experienced teacher population can easily be replicated in various public district profiles. The breakdown of teacher participants, including experience, gender, and content area is included in the participant section of this study. Based upon the stated research problem and purpose for the study, replicated interview questions remain supported by the underlying theoretical components and former research supported by the literature review for self-regulation and included in the appendices. Visually documented curricular modification and assessment processes are included as figures throughout the results section and within logic models and described in such a fashion to be replicated at any

educational site. An inquiry audit completed through Liberty University reviewed the process and evidence of this research.

### **Confirmability**

Confirmability is a degree of neutrality or the extent to which the respondents shape the findings of a study and not researcher bias, motivation, or interest (Lincoln & Guba, 1985). Techniques for establishing confirmability included audit trails and data triangulation presented from each participant's interview, documents, and observation. For all participant data, triangulation of codes and themes were audited for code generation consistency and thematic sorting reasoning. Each research stage is approached systematically, following the same structure of data collection for each individual. An unbiased approach to each participant session was ensured, as the content observed was not in connection to my professional pedagogical assignment.

### **Ethical Considerations**

Site and participant permissions have been acquired before the initiation of the research study. Consent forms and contracts granting the permissions of both site and individual participants have been thoroughly reviewed with each respective case. Participants were informed by reviewing the consent document that this is a voluntary research study in which they may withdraw at any time without consequence. The confidentiality of both site and participants was coded using pseudonyms. Any incriminating or identifying document, verbal statement, or annotation has been removed and coded with the appropriate pseudonym. All data was stored in a password-locked hard drive or locked in an undisclosed physical location away from the research site and will remain stored for three years post study.

### **Summary**

A multiple-case study was selected to analyze the perceptions of twelve K-12 educators of self-regulation in curriculum development practices. Purposefully sampling educators with a range of experiences and abilities, each participant engaged with the research problem through interview, observation, and document retrieval as they progressed through personal curriculum and instruction design and modification processes. Qualitative data collected from each set was synthesized through categorical aggregation to mesh the independent contextual relationships of each participant's perceptions of self-regulation into a thematic unit representing the multiple cases studied. A systematic review of overarching themes in conjunction with the foundational theory of self-regulated learning by Bandura (1986, 1991) was utilized to determine behaviors and actions of participants during educational planning tasks with self-regulation strategies.

## **CHAPTER FOUR: FINDINGS**

### **Overview**

The purpose of this case study was to describe the elements of self-regulated learning utilized by a dichotomy of teachers in RAMS rural school district navigating the process of improving instructional pedagogy and self-efficacy across K-12 standards. In the following section of chapter four, the study participants are introduced in the context of a presentation of the study results. Results of the multi- case study are organized by themes and sub-themes of self-regulated learning principals as identified from participant responses to the research questions. A summary concludes this chapter.

### **Participants**

The participants in this study were a purposeful, maximum variation sample of twelve certified educators from a K-12 public school system in a rural community in Ohio. Table 1 indicates the relevant demographic characteristics of the individual study participants. Respondents compiling the population sample are middle-high school educators, which varied from the anticipated K-12 demographic. All participants have completed the minimum requirements of a bachelor's degree in education with corresponding certifications. In addition, 75% have completed master's degrees in their field of expertise, and 1.3% have a PhD. Of the selected sample, 67% have reached an accomplished rating according to the Ohio teacher evaluation system, while 33% remain as novice, or developing educators. While 88% of the experienced educators have been in the same curriculum standards for a minimum of five years, the novice educator group shows a differentiation in experience with curriculum content and classroom instruction, all with less than five years' experience. In a direct split, 50% of novice educators of this study had only experienced curriculum areas that differ from their present

assignment, developing current practices for the first time. The remaining 50% of the novice group has experienced the curriculum elements for their current teaching assignment without exposure of other content areas. All study participants have experienced mentor/mentee relationships in their developing years of the teacher education process.

Table 1

*Teacher Participants*

Teacher Participant	Years Taught	Highest Degree Earned	Content Area	Grade Level
Sarah	1	Bachelor's	Math	6
Kay	3	Bachelor's	Language Arts, Math	8
Morgan	9	Bachelor's	Language Arts	7
Jessica	7	Bachelor's	Intervention, Language Arts	6, 7
Rachel	1	Bachelor's	Social Sciences	9 – 12
John	1	Bachelor's	STEAM	6 – 8
Jaclyn	16	PhD	Social Studies	10 – 12
Pam	16	Master's	Science	8
Brittany	14	Bachelor's	Language Arts, Math	6
Rod	8	Master's	Intervention, All	6, 7
Alice	9	Master's	Science	9, 11, 12
Ken	10	Master's	Language Arts	10, 11

**Sarah**

Sarah, an energetic new teacher to the RAMS district has entered her first year of mathematics instruction with high expectations for herself. Having taught two years of science curriculum in the private sector, Sarah feels confident in her abilities to engage students in a mathematics course with themed lessons and the inclusion of physical manipulatives to assist learning. Sarah's perceptions of self-regulating her performance growth rest on her experiences with the resident educator performance assessment program, in which evaluators analyze specific

components of lesson instruction for the resident educators. Having performed to her satisfaction with undergraduate university practices of this assessment, Sarah feels confident in her ability to deliver engaging and rigorous content.

### **Kay**

A third- year educator, Kay has only experienced curriculum and instructional approaches for the language arts classroom. Assisting her start to curriculum resources and instruction was the ability to observe and practice leading a classroom with a cooperating teacher, even beyond mandatory student teaching. “I had the luxury of my first-year co-teaching in this environment with the eighth-grade language arts. By doing that, I had a little bit of a taste of the standards and saw how the class was ran and had lesson plans to kind of reference when it came to my year in approaching the new position. I didn't necessarily start from scratch which was really nice.” This additional exposure to the expectations of the classroom raised Kay’s awareness of the necessity for regulatory techniques for her own professional development. She has taken steps in areas of curriculum compacting to boost her pedagogical performance.

### **Morgan**

A certified upper-level English Language Arts educator of nine years’ experience, Morgan is in a continuous state of self-regulation to raise the effectiveness of selected resources, and improve the instructional approaches to reach the level of current learner. Morgan is meticulous when walking through each stage of lesson design and aligning student assessment and personal performance to inform curricular adjustments. Her perceptions of how to best adjust do not stem from a mentor observation. Morgan notes that while her mentor teacher was good, the mentorship relationship did not intentionally help her. She has built her self-regulatory technique on trial and error.

**Jessica**

Having a diversified portfolio in multiple content areas and instructional disciplines, Jessica currently serves as a middle-level intervention specialist. Having the variety of content knowledge bases is a value to her daily tasks of modifying curriculum resources, instructional techniques, and assessments for students. More importantly, she credits her revision process for cross-referencing each students' learning modality to her repertoire of pedagogical tools for her success. For Jessica, self-regulation hinges on utilizing the self-assessment of performance during lesson instruction, even if this means changing the intended lesson design. She describes learning this from a mentorship opportunity, where her observer stated "you went a different route than what I had originally thought you were going to go because you knew your students needed to go that way." Jessica expressed that this experienced changed the way she approached regulating curriculum design.

**Rachel**

Rachel had just completed her student teaching in the history department at RAMS, and was transitioned to a full-time educator as the only member of the food-sciences department. As a true first year teacher, Rachel is feeling the strain of attempting to collect any and all pedagogical tools she had learned from undergraduate training and student teaching to transition her skills to a new content area.

It's all new to me, so I have been using a lot of the previous teachers content and just kind of going through and seeing what I know and trying to familiar myself with it as quickly as possible. Depending on what I can catch on to quickly is usually what I just go to and start planning from there.

The predecessor in the food-sciences department leaving lesson plans has given Rachel a head start, which she admits to be helpful. Even with the basic outline, Rachel being unfamiliar with the content standards and background knowledge of content has contributed to low self-efficacy, and a desire for mentorship support.

### **John**

In a similar position to Rachel, John is a first year STEAM teacher fresh out of his student teaching experience and undergraduate degree. Having been left a pacing guide for the bulk of his courses, John is overwhelmed by the number of resources available. He is familiar with STEAM content, however the specific technicalities of each project need to be learned, as well as how to approach their instruction. John was able to describe the most challenging aspect of lesson design in the following statement.

Knowing what to do. Before you've taught something it's hard because you don't know exactly how it's gonna go. But after the fact it's always for me just the reflective process of well that didn't work, what do I need to do.... I just don't know.

Identifying that for him, it is easier to redesign a provided lesson than create his own, John's self-regulatory process is largely reactive to feeling the need for adjustments to his approach after poor performance. To this effect, there is minimal evidence in his ability to make professional progress and the need for mentorship is expressed.

### **Jaclyn**

Jaclyn is an experienced educator of sixteen years in the world history department at RAMS. Additionally, having received a doctorate degree, she is a leader on several district committees, and runs the course programs for gifted students taking college credits. Feeling well established in her curriculum and instructional practices, Jaclyn describes having had the

foundation of developing an effective dynamic with a mentor teacher at the onset of her career. Even now as she is in the mentor role, the balance of instructional support for mentee's that supports learning and positive self-efficacy is critical for every educator to be able to productively collaborate and develop personal skills.

### **Brittany**

An experienced English Language Arts educator with fourteen years of instructional practice, Brittany has remained focused on using her students to guide her self-regulation. Having worked within an unchanged set of content standards for the course of a decade, Brittany reflects on knowing her students' needs, and allowing them to be the basis for curricular adjustments. With this process, she does perceive that the lack of professional feedback could play a significant role in the effectiveness of her pedagogical choices. Being the only teacher of this content and grade level, Brittany believes that that lack of collaboration and mentorship opportunities is a challenge, limiting potential progress she could have made if given the opportunity for scaffolding with self-regulating lesson revision. "I don't wanna settle or get settled and next stuck in my ways and I'm always looking for new fresh things, you know, to bring to my teaching. And getting feedback from peers would be super helpful."

### **Rod**

Rod comes prepared with a mathematics background, and services students daily as an intervention specialist. While his colleagues in the mathematics department function off of a district adopted curriculum, for Rod's student groups, no curriculum is provided. He develops daily lesson plans from a grade level content standard or basic math skill, and constructs performance tasks and assessments from the ground-up, based solely on the needs of his students. Rod is confident in his abilities to modify and utilize the endless wave of mathematics

resources available from online resources, but heavily expresses the impact of limited collaboration and mentorship across the content team. Rod explains that newer teachers may be familiar with the content, but cannot teach it properly, and the lack of collaboration has strategies being taught year to year being rendered ineffectual.

They've tried in the past where they have gotten math mentors, they've hired them for us, but they ended up being very light and fluffy and not wanting to actually dig into the meat of how to actually improve, how to actually help specific strategies, specific ideas.

### **Alice**

Now an experienced educator in the science department at RAMS, Alice details the process of self-regulation as a “gradual process of refinement.” For the first three to four years of teaching in physical science, it was a consistent game of finding and tweaking resources to fit into an effective classroom model. In doing this, Alice would go through each instructional piece, labs, presentations, transitions, assessments, and ask “was this process important?” Challenging areas that drew her attention for re-design would be approached with self-reflection, asking if the issue lies in the resource, or how it was taught. Almost a decade later, Alice is still using student data and the rare opportunity for feedback from a content area colleague to refine her practices.

### **Ken**

Ken, a higher-level English Language Arts teacher approaches curriculum and instruction from the perspective of creativity and engagement for students with a high level of rigor. Having no particular template that he follows for lesson design; Ken begins with the end goal that is based upon academic content standards and allowing big ideas to develop along the way as students’ progress through a selected text or generate a new idea. Ken expresses that if a lesson

does not particularly go well, he has no direct approach to target issue areas. However, in similar fashion to his colleagues, Kens consistent go-to is debriefing with a content area colleague to discuss specific issues with curriculum resources, or pedagogical accommodating for a particular group of students.

## **Results**

Individual interview data was analyzed in MAXQDA computer-assisted qualitative data analysis software inductively and thematically. Embedded data analysis found and organized significant statements addressing Bandura's (1991) concept of self-regulation. Codes applied to text samples of interviews, observations, and document data of the participant perceptions of self-regulation generated four major themes. Significant statements were correlated and categorized by categorical aggregation during data analysis, including: forethought in lesson planning (theme 1), self-assessing performance (theme 2), self-reflection and restructuring (theme 3), and self-efficacy through mentorship and self-assessment (theme 4).

### **Forethought in Lesson Planning**

All twelve participants indicated that they engaged in forethought, defined as the stage of self-regulated learning in which the learner plans or rehearses their performance (Bandura, 1991). The participants in this study engaged in forethought within the task of lesson planning. Lesson planning was a composite of multiple practices to which the participants indicated planning based on assessment results, chunking concepts, focusing on student engagement, planning for differentiation of instruction, finding real-world connections and applications of the course content, and referencing state standards for content. Planning also involved preparing to meet the challenges of conducting effective instruction, keeping students engaged, identifying effective instructional resources, differentiating instruction to meet all students' individual needs,

and time management to ensure that all necessary content was effectively covered. Table 2 indicates the sub-themes associated with theme 1.

Table 2

*Theme 1 Sub-themes*

<b>Theme</b> Sub-theme (alphabetized)	<i>n</i> of participants contributing ( <i>N</i> =12)	<i>n</i> of references to assigned theme
<b>Theme 1: Forethought in lesson planning</b>	12	52
Chunking concepts	4	5
Differentiating instruction as a challenge	8	10
Student engagement	12	27
Resources challenges	4	4
Standards-based lesson planning	6	9

*Chunking Concepts*

The strategy of chunking within a lesson design provides the opportunity for diversity in activities and instructional approaches to be included within the same lesson session to promote the effectiveness of content delivery. Four participants indicated that basing their lesson planning on state standards required them to break, or chunk, large topics into lessons that could be delivered within a single class period. Sarah, a novice educator, said of how they conducted chunking to break down large topics into a series of lessons.

I look at, first off, what the standard is and figure out how I can break that up . . . so I try and chunk it down that way. And then, every lesson, I try and do a little bit.

Pam, an experienced educator in the science department agrees with Sarah.

We have hour long classes, so I'm breaking that up into at least three different segments in a day. So, there's at least three different things that are gonna happen within that hour,

just because I have middle schoolers and more than 15, 20 minutes, forget it, they have lost interest and there not paying attention anymore.

### ***Differentiating Instruction Is a Challenge***

Instructional differentiation is the task of designing curriculum to fit the specific needs of the students in the learning environment while integrating effective and appropriately leveled content instruction. Jaelyn, an experienced teacher participant described the practice of differentiation during the lesson design process as “offering them options of choice, and exploring some of those things while still making sure that we are covering standards.” From interview and observation data, eight participants reported that differentiating instruction to meet the individual needs of all students was a significant challenge. From the novice group of educators, Kay was the only educator to discuss the concept of differentiation in terms of needing extension for a higher-level group of students within her main lesson design. During the observation of her lesson revision, Kay was observed consistently reverting back to the concept of holding students accountable for their level of learning. Without evidence of differentiation to accomplish this goal, Kay implements an increased rigor of content activities into the lesson progression over the span of three days, not yet meeting significant evidence of tiered differentiation within each lesson.

In addition to the novice group struggling with differentiated lesson design, 63% of experienced educators also expressed challenges with differentiated lesson design. While the experienced group of participants were all able to accurately communicate the base theoretical concept of differentiatial practices during the application of curriculum design and instruction continues to elude them. Brittany, an educator of fourteen years admits to being overwhelmed “thinking about all of the different levels that I have in my room and how to try to get all of the

students to learn successfully and to come away feeling like they understood the content”.

During the observation of Brittany’s lesson design, this technique of curriculum development is confirmed by Brittany being unable to move beyond eliminating a writing prompt that she felt would confuse the students, rather than take that knowledge to further develop instructional approaches or resources within the content. Pam shares a similar approach to Brittany as noted during observation of her lesson design and documented lesson template. To meet her students’ needs, adding an extra worksheet or creating another three to four questions for students to answer should cover any struggling or advanced learner. Pam confidently states during her interview, “I have been teaching this for ten years, so I have...here’s the content that needs to be taught, here’s how I’m going to do it.” In the processes of Brittany and Pam, forethought and lesson planning did not involve significant attention to how the required content could be presented effectively to different students, based on their needs, to ensure all students received effective instruction.

Jessica said of the challenges faced in planning lessons, “It's meeting the students where they are, and none of them are on the same level...it’s hardest to try, and you know, focus on because you have so many different levels.” As examples of how planning for differentiated instruction worked, the observation of Jessica’s lesson planning process and documented lesson template added, “Making sure that the high group gets maybe pushed a little harder. Maybe that mid group needs, maybe, vocabulary looked at again, and then that lower group maybe needs a reteach.” Jessica provides evidence of developing tiered resources and instructional techniques, as well as the consistent self-regulation of each element designed within the lesson plan. Notations suggesting additional resources, interventions, and instructional elements were actively included as an integral practice promoting future opportunities for improvement.

### *Student Engagement*

Regardless of the complexity of the academic content standard, pedagogical techniques that engage student cognition and participation to practice and apply the information was a challenge mentioned by all twelve participants. In particular, three participants indicated that a specific goal of their lesson planning (in addition to targeting the academic content standard) was to maximize student engagement with the content. Brittany expressed in her planning to maximize student engagement that the prior preparation and needs of individual students must be a part of the forethought process. “I start with just thinking about their background knowledge and the content, and then trying to design something that is going to be engaging, really, is my focus for them”. As an example of how they tried to make instruction engaging, Brittany reported that they worked to alternate between the reading required in Language Arts and other activities: “In my content area, with Language Arts, sitting down and reading from a text is primarily what the kids are doing. So, if I can incorporate any sort of activity, I try to find ways to do that.” As an example of planning to keep students engaged, a review of a lesson-planning document from Sarah showed the daily math challenge “show examples of equivalent ratios and have students explain what they noticed about them” crossed out, and the activity, “dot simulation” handwritten in as a more engaging substitute lesson.

In conjunction with focusing on student engagement, keeping students engaged calls for instructional techniques within the rotation of chunked activities devoted to academic growth towards the academic content standard. For three participants, consideration of instructional techniques promoting student engagement during lesson planning was intentional, although student engagement during instruction remained challenging. Rod said that in teaching math, it was a challenge to find ways to keep students engaged when they might be more inclined to give

up when they were required to master a challenging skill. “There are a couple of those skills where the moment they see that question, they're checked out, they're like, ‘No, I can't do that. That's too long.’” Rod added that planning engaging lessons was necessary for “trying to figure out a way to explain the content so it's not, ‘Oh my gosh, it's fractions again. I'm lost. I can't do this.’ Getting it so they aren't going to just give up once they see it.” For the novice educators of this study, student engagement challenges occur in both procuring curriculum resources and instructional techniques for implementing selected resources. The perception of being overwhelmed recurred frequently, with the basis that the content standards are the primary source of information to build lessons upon. Even with the provided content direction, standards leave much to be desired for engaging activities and how to implement them.

### ***Resources Challenge***

Resources, or the variety of modalities to access content information have traditionally been presented to educators as a district approved classroom textbook. Of the categories of this studies twelve participants, the Language Arts and Mathematics content areas are the only educator groups provided with district approved texts. These texts are noted to be used as a baseline of curriculum practice, while supplemental activities and reading materials are additionally implemented. All other content area participants are not provided with a standardized or district recognized curriculum or classroom resources, and therefore are tasked with creating or borrowing all content materials. According to four participants, finding and utilizing appropriate instructional resources to plan their lessons around was a challenge. John said that the volume of available resources made lesson planning challenging: “There's a lot of things out there. It's almost overwhelming when you're looking for STEM curriculum . . . there's

so many different websites or resources out there that'll do different things.” On the contrary, Alice expresses frustration in attempting to find any applicable resources.

I gotta say it's a constant game of finding new resources cuz it's a brand-new class right out the gate. So, the way you handle a class you've taught for nine years versus something brand new is probably totally different. ‘Cuz I feel like every single day I; I'm pulling up new resources for forensics and then I'm using them for the first time. So now I'll go into the refinement where I have to look more at how did I teach it, how, what do I need to fix on it type stuff... I would say it has been a gradual process of refinement in terms of finding new resources and improving the resources I have to get to a place where I'm happy with the way they work.

Three participants indicated that a significant challenge they tried to address with their lesson planning was the time constraint imposed on instruction by the length of a class. The length of a class influenced how these participants chunked the content and what kinds of activities they could conduct with their students. Asked about significant challenges, Alice said, “time,” and elaborated by saying, “I have lots of ideas for super-cool labs . . . [but] 43 minutes is a quick amount of time to have them set up, conduct an experiment, and clean stuff before the next group comes in.” Ken also answered, “Time,” when asked about significant challenges, adding, “I have lots of big ideas . . . [but] it doesn't get done the way I would really like it to be, just because I haven't had time.”

### ***Standards-based Lesson Planning***

Six participants indicated that they based their lesson planning on state standards. These participants expressed that referencing the state standards when planning lessons provided them with a framework and a set of goals to meet with their instruction. Their lesson planning was

then organized around the required instructional goals. Pam described basing lesson planning on state standards as “working backwards” from overarching instructional goals to the details of individual lessons. “Here's the standards, and here's the things I need to cover. Here are the questions that will cover that, and then work backwards with what do I need to teach for them to know these things.”

### **Self-assessing Performance**

All twelve participants indicated that part of their self-regulated learning was performance, the stage in which the activity being learned is conducted (Bandura, 1991). To promote self-regulated learning based on performance, the participants indicated that they assessed themselves in three ways. One way in which participants assessed the efficacy of their instructional delivery was through students’ performance on assessments. Participants also self-assessed their performance as teachers by monitoring student performance on tasks other than assessments, such as projects and classwork. An additional approach in which participants assessed their effectiveness as teachers was by monitoring student reactions to instruction, often by looking for body language that conveyed confusion or boredom. Table 3 indicates the sub-themes associated with Theme 2.

Table 3

#### *Theme 2 Sub-themes*

<b>Theme</b> Sub-theme (alphabetized)	<i>n</i> of participants contributing ( <i>N</i> =12)	<i>n</i> of references to assigned theme
<b>Theme 2: Self-assessing performance</b>	12	38
Assessments	8	12
Monitoring student performance	7	8
Monitoring student reactions	9	14

### *Assessments*

Eight participants reported that one of the ways they assessed their performance as teachers was through the results of the assessments their students completed. High scores on the assessments indicated that instruction was effective, and students were learning, although scores that were too high might indicate that the material was too easy for the class. Low scores indicated that instruction was not as effective as it needed to be. Jessica said, “I can definitely tell on those assessments if they're [students] getting it or if they're not getting it,” citing spelling tests as one example of a relevant assessment. Jessica added of the significance of assessment results in measuring the efficacy of their instructional delivery, “If I see that the students are all failing, or that they're all not meeting that goal, that's something I need to fix.” An example of a planned assessment of student knowledge was provided on the lesson-planning document from Pam, which had a handwritten note reading, “States quiz?” on two different days, as Pam tried to find a day when there would be sufficient extra time in the class to administer the planned assessment.

### *Monitoring Student Performance*

Monitoring students’ performance on activities other than assessments, including projects and homework, was an additional means of self-assessing instructional effectiveness, seven participants indicated. Sarah reported using student performance on homework to assess teaching efficacy: “We go over homework the following day, we talk about which ones we struggled with, which ones we were okay with. That's how I measure where I'm going.” Asked how they self-assessed the effectiveness of their instruction, Rachel referred to students’ performance on homework and in class participation: “I would have to say whether or not their homework is showing correctness, and whether or not they are giving me feedback when I'm asking questions

in class.” As an example of a planned assignment that could be used to assess student understanding, Jaclyn provided two documents for review, one of which was a worksheet entitled “Planned Tour of Ellis Island.” The second document Jaclyn provided was a weekly lesson plan, with the plan for Monday reading, “Complete and turn in Tour of Ellis Island.” Another note on Jaclyn’s lesson plan, for Thursday of the same week, read, “Read through Urbanization Notes,” and “Use the notes to complete the Solutions to Urban Problems worksheet. Turn it in when complete.”

### ***Monitoring Student Reactions***

Nine participants indicated that one method of personal self-assessment was by monitoring student reactions, particularly including nonverbal cues that might indicate incomprehension or disengagement. Morgan said of one of the ways in which they self-assessed instructional performance by monitoring student reactions, “If I do an activity and it's like, oh, everybody has eyes glazed over, well, we're not doing this again, or we're going to change it and do something different because this isn't working.” Jessica said the student reactions they monitored to self-assess performance included, “The students’ actions during the lesson: their body language, their behavior. Were they paying attention? Were they into it? Were they sleeping? Were they raising their hands and participating?” Ken said of the influence of student reactions on self-assessment, “If I get a lot of enthusiastic head nodding and hands up, I know it's going right. And if I'm not getting that, then I need to reevaluate the strategy.”

### **Self-reflection and Restructuring**

Self-reflection is the third stage of self-regulated learning described in Bandura (1991). Findings in this study indicated that teachers relied on self-reflection when they integrated feedback gained through self-assessment to adjust their lesson plans to make them more

effective. Changes to lesson plans that participants reported included minor modifications, reteaching, drawing on additional resources, and implementing a different instructional medium. The participants added that in addition to self-reflection, feedback from colleagues to guide modifications to their lesson plans was a key instrument of this process. Table four indicates the sub-themes associated with theme three.

Table 4

*Theme 3 Sub-themes*

<b>Theme</b> Sub-theme (alphabetized)	<i>n</i> of participants contributing ( <i>N</i> =12)	<i>n</i> of references to assigned theme
<b>Theme 3: Self-reflection and restructuring</b>	12	50
Adjusting lesson plans	7	8
Drawing on additional resources	11	20
Reflection	7	11
Reteaching	7	11

*Adjusting Lesson Plans*

Five participants indicated that on the basis of their self-assessments and self-reflection, they would make minor adjustments to their lesson plans to improve their performance. Morgan stated that when self-assessment and self-reflection indicated that a class activity was not an effective instructional method, “I would probably small adjustments [to my lesson plan]. I would try to isolate, what is the problem with this activity? Why is it not working? And then make adjustments from there.” Kay emphasized that adjustments to lesson plans were typically minor: “I haven't really reworked an entire lesson. I would just more tweak some things and maybe make some minor notes to how I do my lesson plan.” As an example of a minor lesson adjustment to increase student engagement and effort, Kay handwrote on a lesson plan they

provided during the document review, “Hold students more accountable with their answer sheet,” and, “Hold students more accountable for what they are doing at each station” regarding an activity in which students rotated between stations to complete a worksheet.

### ***Drawing on Additional Resources***

Eleven participants stated that in addition to self-assessment and self-reflection, they used advice from fellow teachers as a basis for restructuring lessons. Rod said of the help they received from a colleague, “I worked with the seventh-grade math teacher, and she had a lot of very useful resources and different methods for teaching concepts which I had just never thought of.” Rod added of how they received their colleague’s help, “We would meet during our plan almost every day to discuss how our lessons went, what we were going to do going forward, and stuff like that.” Alice described fellow teachers as their most effective source of advice, saying, “I think the best feedback and information I’ve gotten from people are definitely colleagues” expressing of how they exchanged advice with other teachers that it involved, “Just having that discussion, ‘What would you do in this situation? How could I try to improve this?’”

One of the ways that self-assessment and self-reflection caused five participants to modify their lesson plans was by prompting them to draw on additional teaching resources. Alice described the process of finding new resources to replace less-effective ones as one of ongoing refinement. “It has been a gradual process of refinement, in terms of finding new resources and improving the resources I have, to get to a place where I’m happy with the way they work.” Sarah reported that they would find new resources to replace confusing ones: “If it was just the worksheet that they [students] didn’t understand, probably just finding a new one and seeing, okay, will this work instead?” Resources that were not sufficiently effective could also be modified to make better learning tools. As an example, Brittany provided a worksheet as a

document for review, entitled, “Graphic Organizer,” with prompts for students to use in planning a writing assignment. The first prompt read, “Topic Sentence (will include the following six ideas)” drawn from the story the students would be writing about, followed by a list of the six ideas to be included. Brittany reported that this instruction was confusing to students, so in modifying the resource, Brittany crossed out the list of “six ideas” to allow students to identify the ideas they would reference. As a second example of resource modification, Alice provided as a document for review a worksheet entitled, “Accuracy and Precision Lab.” The worksheet was divided into “Parts,” each of which included two or three questions for students to answer. Under Part 2, the following question appeared: “Calculate the mass of water as measured by the balance.” Alice drew a star beside this item and wrote, “Put after each section,” indicating that students would be required to calculate the mass of the different volumes of water referenced in each part of the worksheet.

### ***Reflection***

The participants described the self-regulated learning stage of reflection (Bandura, 1991) as the basis of many of the modifications they made to their lesson plans to improve their performance. Seven participants referenced self-reflection explicitly in their responses. Sarah stated that after a class in which they self-assessed their performance as having room for improvement, “I would reflect mostly on myself first, and seeing, okay, what was wrong? What part of the lesson did you lose the kids, or what part of the lesson did they not quite get?” Brittany also contemplated changes to instruction through self-reflection, they said: “I’ll often reflect that, okay, I could have explained something better, or I could have given them a definition so that they understood the writing prompt a little bit better.”

### ***Reteaching***

A pedagogical approach of seven participants is the modification of lesson plans after self-assessment and self-reflection indicated that a change was needed was to find ways to reteach content that students were having trouble learning. Rod reported reteaching material that students had not understood using a different teaching method: “If they [students] didn't seem like they understood it, then I would have to reteach the same concept the next day, but in a different way.” Alice provided a response that corroborated Rod’s, saying, “If I think that they [students] totally missed the point, then I'll just have to do a reteach the next day. Instead of moving forward, I'll figure out another way to work through the material.” As an example of modifying a lesson plan to facilitate reteaching, Morgan, during the document review, provided a weekly lesson plan in which Monday’s activities were crossed and replaced with a handwritten note indicating, “Re-read Grapes of Wrath,” a reteaching of the activity, “Read or listen to The Grapes of Wrath (model annotations)” from the previous Friday.

### **Self-efficacy Through Mentorship and Self-assessment**

All 12 participants described their self-efficacy as teachers, or the extent to which they believed they were competent to plan and teach effective lessons, as positively influenced by mentorship or their own self-assessments of their strengths and achievements. Mentorship did not always come from assigned mentors, however. Although some participants described guidance from mentors as increasing their self-efficacy, other participants reported that student teaching or administrator evaluations influenced their self-efficacy more strongly than mentorship. Self-assessments of strengths such as skill at planning lessons and effectiveness at helping students to connect and engage with course content also contributed to self-efficacy. Table five indicates the sub-themes associated with theme four.

Table 5

*Theme 4 Sub-themes*

<b>Theme</b> Sub-theme (alphabetized)	<i>n</i> of participants contributing ( <i>N</i> =12)	<i>n</i> of references to assigned theme
<b>Theme 4: Self-efficacy through mentorship and self-assessment</b>	12	26
Increased self-efficacy	12	26

*Increased Self-efficacy*

Two participants indicated that administrator evaluations of their teaching based on classroom observations increased their self-efficacy. Morgan reported that administrator evaluations increased their self-efficacy in part by making them aware of their strengths: “I really value that feedback from administration. I think someone coming in, objectively, and saying, ‘Here are your strong points,’ that helps me, because I don’t always see that.” Jessica also described praise received from an administrator after a classroom observation as increasing their self-efficacy: “I sat down with the person who was observing me, and she said, ‘Your lesson was great. Your delivery was okay.’ And it kind of floored me that my delivery was okay.” Jessica’s self-efficacy was increased further after a second observation, after which the administrator said their delivery was better than “okay,” saying, “The second time, it [delivery] was more natural. You just fed off of what the students were telling you with their body language and their questions that they were answering.”

Nine participants reported that their self-assessment of their strength at helping students to connect and engage with course content increased their self-efficacy. Sarah reported that one of their goals in lesson planning was to get students to engage positively with math: “When I got this job, I was trying to figure out how can I make math not the worst thing on the planet, ’cause

a lot of kids come in with that automatic, ‘I hate math.’” Sarah said of the lessons they planned to make math engaging for students, “I try and make it engaging and entertaining. Whether I'm doing scavenger hunts, or escape rooms, or like today, we played with frosting.” Additionally, Sarah indicated that reflecting on the success of the activities in keeping students engaged led to positive self-evaluations and increased self-efficacy: “It just makes me feel good knowing that I I'm planning stuff that is entertaining . . . I think that's the most positive thing for me, is what I'm doing, they're not hating it.” Kay expressed that they were motivated to make lessons engaging because, “I take into consideration how long the class periods are, and how boring it can be to just be sitting in your seat, especially if you're doing the same thing the entire time.” To make lessons more engaging, Kay planned ways for students to collaborate, and when the collaborations were effective in maintaining student engagement, her self-efficacy was increased: “If it was a successful collaboration, that makes me feel good, because I feel collaborating with their peers and sharing ideas and thoughts is super-crucial to their learning process.”

Four participants indicated that guidance from one or more mentors increased their self-efficacy as teachers. Jaclyn said of a mentor, “She was very helpful in showing me these are the things that you do, these are the things we've improved on. And that was a really positive situation. It was nice to have that.” Ken described their mentors as helping them to develop the teaching philosophy they continued to rely on: “My mentors, especially in the early years, they sat on my shoulder like Jiminy Cricket. They helped me develop my philosophy, and I knew that I needed my learning activities to be like authentic.” During the observation of lesson development, Alice continually referenced the desire to utilize content area colleagues as mentorship opportunities. Mentorship effectiveness was believed to have increased value when

the scaffolding moments between mentor and mentee were based on specific curriculum and instruction tactics of higher-level content area knowledge on behalf of both individuals. Novice educator participants expressed similar perceptions throughout interview conversation and expression of ideas during lesson development. All novice educators presented a desire for increased support from mentorship opportunities of content area leadership, particularly in lesson development and self-reflection for positive self-efficacy.

### **Research Question Responses**

#### **Central Research Question**

What are teachers' perceptions of self-regulated learning strategies in personal pedagogical growth? The theme used to address this question was: forethought in lesson planning. All 12 participants indicated they engaged in forethought, defined as the stage of self-regulated learning in which the learner plans or rehearses their performance (Bandura, 1991). The participants in this study engaged in forethought through lesson planning. Lesson planning was a composite of multiple practices, the participants indicated, including planning based on assessment results, chunking concepts, focusing on student engagement, planning for differentiation of instruction, finding real-world connections and applications of the course content, and referencing state standards for content. Additionally, planning involved preparing to meet the challenges of conducting effective instruction, including keeping students engaged, identifying effective instructional resources, differentiating instruction to meet all students' individual needs, and time management to ensure that all necessary content was effectively covered.

**Sub-Question One**

What are the perceptions of K-12 teachers of using self-regulation to analyze pedagogical performance in the classroom? The theme used to address this question was: self-assessing performance. All 12 participants indicated that part of their self-regulated learning was performance, the stage in which the activity being learned is conducted (Bandura, 1991). To promote self-regulated learning based on performance, the participants indicated they assessed themselves in four ways. Jessica describes a method of participants assessing the efficacy of their instructional delivery was through students' performance on assessments.

Using those assessment pieces, even if I'm not paying attention to the students during the lesson, or if I'm not getting feedback from other teachers, I can definitely tell on those assessments if, I mean, if, if they're getting it or if they're not getting it.

Participants also self-assessed their performance as teachers by monitoring student performance on tasks other than assessments, such as projects and classwork. An additional approach in which participants assessed their effectiveness as teachers was by monitoring student reactions to instruction, often by looking for body language that conveyed confusion or boredom. The participants also self-reflected on their own levels of preparedness and clarity to assess their performance in the classroom.

**Sub-Question Two**

What are the perceptions of teachers on the importance of self-regulation as they are tasked with pedagogical restructuring? The theme used to address this question was: self-reflection and restructuring. Self-reflection represents the third stage of self-regulated learning described in Bandura (1991). Findings in this study indicated teachers relied on self-reflection when integrating feedback, they gained through self-assessment to adjust their lesson plans to

make them more effective. Changes to lesson plans that participants reported included minor modifications, reteaching, drawing on additional resources, and implementing a different instructional medium. The participants added that in addition to self-reflection, they also used feedback from their colleagues to guide modifications to their lesson plans. For example, Morgan describes a moment of feedback from a grade level colleague.

I work with the seventh-grade science teacher, and I think actually really helpful feedback and something I'm still trying to work on is especially when working with very high kids or gifted kids that it's not necessarily giving them more, but giving them content that has more rigor... so I think having that sort of conversation with that colleague helped me because it's like, it's keeping that in my mind.

### **Sub-Question Three**

How does the perceived value of the self-regulated learning strategy influence K-12 teachers' self-efficacy? The theme used to address this question was: self-efficacy through mentorship and self-assessment. All 12 participants described their self-efficacy as teachers, or the extent to which they believed they were competent to plan and teach effective lessons, as positively influenced by mentorship or their own self-assessments of their strengths and achievements. Kay described the utilization of colleague input as a mentorship opportunity.

I do take a lot of feedback. I'm very open to it. I respect what other teachers have to say about what I'm doing, because I know there is multiple ways that you can do something in your classroom and it's impossible to think of all possibilities. So, if anyone's willing to give me any type of feedback, even if I'm like, is that constructive criticism? I wanna hear it because it might be something that I take into consideration.

Mentorship did not always come from assigned mentors, however. Although some participants described guidance from mentors as increasing their self-efficacy, other participants reported that student teaching or administrator evaluations influenced their self-efficacy more strongly than mentorship. Self-assessments of strengths such as skill at planning lessons and effectiveness at helping students to connect and engage with course content also contributed to self-efficacy.

### **Summary**

The purpose of this case study was to describe the elements of self-regulated learning utilized by a dichotomy of teachers in RAMS rural school district navigating the process of improving instructional pedagogy and self-efficacy across K-12 standards. The participants were a purposeful, maximum variation sample of twelve certified educators from a K-12 public school system in a rural community in Ohio. Data from individual interviews and document reviews were analyzed thematically. The following four themes emerged to address the research questions: (Theme 1) forethought in lesson planning, (Theme 2) self-assessing performance, (Theme 3) self-reflection and restructuring, and (Theme 4) self-efficacy through mentorship and self-assessment. Chapter 5 includes discussion and interpretations of these findings.

## **Chapter 5: Conclusion**

### **Overview**

A prominent issue in the modern education system concerns entry-level and developing teachers failing to learn how to effectively improve pedagogical techniques within the first five years of professional evaluation (Karlen et al., 2020; Peters-Burton et al., 2020; Vrieling et al., 2018). The purpose of this case study is to determine the elements of self-regulated learning utilized by a dichotomy of teachers in RAMS rural school district navigating the process of improving instructional pedagogy and self-efficacy across K-12 standards. This study utilized a qualitative multiple case study design for certified educator participants from a K-12 public school system in a rural community in Ohio. From thematic analysis, the following four themes emerged to address the research questions: (Theme 1) forethought in lesson planning, (Theme 2) self-assessing performance, (Theme 3) self-reflection and restructuring, and (Theme 4) self-efficacy through mentorship and self-assessment. Chapter 5 includes an interpretation of findings, implications for policy or practice, theoretical and empirical implications, limitations and delimitations, and recommendations for future research.

### **Discussion**

After analysis, the findings revealed teachers engaged in forethought through lesson planning, which included planning based on assessment results and keeping students engaged. Teachers also promoted self-regulated learning based on performance by assessing themselves through students' performance on assessments. Further, the findings indicated teachers relied on self-reflection when they relied on the feedback. Self-efficacy is positively influenced by mentorship or teachers' own self-assessments of their strengths and achievements.

## **Interpretation of Findings**

Findings were interpreted in relation to the theoretical and empirical literature connected to self-regulated learning and pedagogical development. Provided below is the summary of the thematic findings of the analysis.

### ***Summary of Thematic Findings***

Concerning forethought in lesson planning, findings revealed participants in this study engaged in forethought through lesson planning, which was a composite of multiple practices, including planning based on assessment results, chunking concepts, focusing on student engagement, planning for differentiation of instruction, finding real-world connections and applications of the course content, and referencing state standards for content. Planning also involved preparing to meet the challenges of conducting effective instruction, including keeping students engaged, identifying effective instructional resources, differentiating instruction to meet all students' individual needs, and time management to ensure that all necessary content was effectively covered. The findings indicate forethought planning enhanced instructional practices and self-efficacy among teachers.

Regarding self-assessing performance, the participants indicated part of their self-regulated learning was performance, the stage in which the activity being learned is conducted (Bandura, 1991). To promote self-regulated learning based on performance, the participants indicated they assessed themselves in four ways. One way in which participants assessed the efficacy of their instructional delivery was through students' performance on assessments. Participants also self-assessed their performance as teachers by monitoring student performance on tasks other than assessments, such as projects and classwork. An additional method in which participants assessed their effectiveness as teachers was by monitoring student reactions to

instruction, often by looking for body language that conveyed confusion or boredom. The participants also self-reflected on their own levels of preparedness and clarity to assess their performance in the classroom. The results indicate self-assessing performance among teachers enhanced the efficacy of their instructional delivery.

Self-reflection for restructuring findings indicate teachers relied on self-reflection when they valued and implemented feedback gained through self-assessment to adjust their lesson plans to make them more effective. Changes to lesson plans that participants reported included minor modifications, reteaching, drawing on additional resources, and implementing a different instructional medium. The participants added that in addition to self-reflection, they also used feedback from their colleagues to guide modifications to their lesson plans. The findings reveal teachers self-reflected and restructured their instructional practices by implementing different instructional medium of learning.

In regards to self-efficacy through mentorship and self-assessment, the participants described their self-efficacy as teachers, or the extent to which they believed they were competent to plan and teach effective lessons, as positively influenced by mentorship or their own self-assessments of their strengths and achievements. However, mentorship did not always come from assigned mentors. Although some participants described guidance from mentors as increasing their self-efficacy, other participants reported that student teaching or administrator evaluations influenced their self-efficacy more strongly than mentorship. Self-assessments of strengths such as skill at planning lessons and effectiveness at helping students to connect and engage with course content also contributed to self-efficacy. The results demonstrate that self-efficacy among teachers was enhanced through mentorship programs and self-assessment by teachers themselves. Presented below are the interpretations of findings.

**Lesson planning improves teachers' pedagogy instructional practices.** Results demonstrated teachers engaged in forethought through planning their lessons involving a composite of multiple practices such as planning built on assessment results, chunking concepts, focusing on student engagement, planning for differentiation of instruction, finding real-world connections and applications of the course content, and referencing state standards for content pedagogy in classroom. According to the participants, teachers planned by preparing to meet various challenges in providing effective instruction such maintain student engagement, identifying effective instructional resources for teaching as well as differentiating instruction to meet the needs for every student in classroom as well as improved time management to ensure that all necessary content was effectively covered. The findings indicate that forethought planning enhanced instructional practices and self-efficacy among teachers.

These findings confirm the past literature findings of Vrieling et al. (2018) in finding that goal setting was scaffolded without the reinforcement of mentorship in environmental and behavioral domains of self-regulation can produce goal setting practices but is ineffectual at generating progress in accomplishing the said goal, indicating that planning enhanced teachers' teaching practices. The findings also corroborated previous research findings of Zheng et al. (2020) who established that forethought lesson planning phase, though effective when beginning with goal setting practices, was increasingly effective when there was collaboration on the goal orientations and critical strategies of timeline organization and planning knowledge acquisition and performance reflection.

The results imply planning for pedagogy instructional practices prior to teaching could improve teachers' instructional practices in classroom because planning enhances time management and use of appropriate learning resources. Further, the findings are consistent with

the past study findings of Batool et al. (2019) in noting that frontloading knowledge of SRL strategy includes learner outlining plans for knowledge acquirement, practice, and intensifying practices in higher-order processing that will evoke what the learner would naturally take on before any formal instruction occurs for how to attain the goal. The Cañabate et al. (2020) findings are reflected in current study results by indicating that frontloading knowledge of SRL strategy processes involve in the planning outline may include concept maps, timelines, resource lists, mentor input, or these strategies to bridge the desired outcome to the current accessibility of knowledge and skill.

The findings contradicted past literature findings of Zhu and Mok (2018) that the forethought phase integrating a teacher mentor influenced learners' goals with likelihood of greater learner success above any other SRL phase or strategy. However, the findings agreed with additional previous results of Zhu and Mok (2018) who claimed that for students to maximize the support from future phases of self-regulation, including the attainment of both performance and mastery goals, the learner must collaboratively practice goal setting and performance strategy planning within the forethought domain.

The findings have contributed to the previous literature by establishing that forethought lesson planning could enhance teachers' pedagogical instructional practices.

**Teachers can self-regulate their instructional practices through self-assessing performance.** Results revealed to promote self-regulated learning based on performance, teachers assessed themselves by assessing the efficacy of their instructional delivery through students' performance on assessments, monitoring student performance on tasks other than assessments, such as projects and classwork. Further, the findings indicated teachers can assess themselves through monitoring student reactions to instruction, often by looking for body

language that conveyed confusion or boredom. The participants also self-reflected on their own levels of preparedness and clarity to assess their performance in the classroom. The findings imply that self-assessing performance among teachers enhanced the efficacy of their instructional delivery in classroom. These findings corroborate with past literature results of Bandura (1991) in stating that self-regulation allows for a formative assessment of performance, triggering factors of self-regulatory motivation to improve individual skills, surpassing the peer group. Similar findings to current study results were also reported by Zheng et al. (2020) who established that a significant shift from traditional knowledge acquisition methods was that a scaffolded performance comparison supports individuals' self-regulation by modeling expected behaviors and content presentation.

However, the findings contradict past literature results of Vreiling et al. (2018) whose evidence suggests that scaffolding is a needed component to segment identification and exploration of learning gaps and identify content resources necessary to establish performance growth among teachers through self-regulation and self-assessment. According to prior literature findings of Zheng et al. (2020), there is a need calls to supporting educators with a synergy of performance strategies that include organizational practices, pedagogical theories, self-regulation, self-assessment and attention to social relationships that can foster self-regulated competencies in these areas. However, the findings concurred with past study results of Vrieling et al. (2018) in finding that to improve personal performance strategies or tasks, most participants supported the collaboration of educators in scenarios when metacognition is a performance strategy that is modeled and practiced within the context of the desired improvement goal. The results of the current study add to the past literature by establishing that

teachers can improve their instructional practices through self-regulation and self-assessment such as monitoring student reactions to instruction as well as assessing students' performance.

**Teachers can improve their instructional practices through self-reflection and restructuring learning.** Results indicate that teachers used self-reflection when they relied on the feedback, they gained through self-assessment to restructure their lesson plans to make them more effective in classrooms. According to the participants, lesson plans restructuring included minor modifications, reteaching the course content, drawing on additional resources for learning, and implementing a different instructional medium such as differential instruction teaching practice in classroom. Additionally, the findings indicated that teachers can improve their instructional practices through use of feedback from their colleagues to guide modifications to their lesson plans. The results reveal that teachers may self-reflect and restructure their instructional practices or lesson plans to suit their classroom composition by implementing different instructional medium of learning such as differentiation instruction. These finding concur with previous literature findings of Li et al. (2018) who found that while video-assisted self-reflection improved student academic outcomes, it played an important role in improving teacher growth, performance, and professional development as they reflected on areas that needed improvement.

Findings also aligned with past literature results of Thompson et al. (2019) in reporting that digital simulation that promoted novice teacher reflection enhanced their engagement and overall growth. Li et al. (2018) findings are also consistent with the current study results indicating that video self-reflection played a critical role in improving teacher performance and growth by promoting communication and enhancing teacher-student interactions. The results are also reflected in past study findings of McCoy and Lyman (2021) in finding that video evidence

and weekly video footage supported teachers' weekly self-reflection and encouraged the development of self-reflective habits among the teachers, implying that self-reflection allowed teachers to reflect on their pedagogical practices and identify the areas that needed improvement, thus enhancing their overall performance.

These results contradict the previous research findings reported by Eriksson et al. (2018) in finding that classroom assessments allowed teachers to assess their skills and areas of improvement and experience overall performance growth. Barth-Cohen et al. (2018) reiterated current study results by having found that teachers who practiced self-reflection identified and understood the instructional challenges that they faced and sought practices that would improve their overall performance and professional growth. However, the findings support past study findings of Muhonen et al. (2022) in reporting that found that self-reflection did not only help teachers address stress in their teaching profession but also improved their delivery of content reflected in their performance growth. As such, when used correctly, self-reflection and feedback enhance teachers' performance and growth (Muhonen et al. (2022)). The results add to the past literature by indicating that teachers can improve their instructional practices through self-reflection and restructuring learning.

**Self-efficacy in instructional practices can be achieved through mentorship and self-assessment.** The findings indicated the mentorship and self-assessment improves teacher's self-efficacy, thus enhancing their pedagogy instructional practices. Participants described their self-efficacy as teachers, or the extent to which they believed they were competent to plan and teach effective lessons, as positively influenced by mentorship or their own self-assessments of their strengths and achievements. Some participants indicated student teaching or administrator evaluations influenced teachers' self-efficacy more strongly than mentorship. The results reveal

that teachers self-assessed their strengths' such as skill at planning lessons and effectiveness at assisting students to connect and engage with tear coarse content in classroom resulted in increased self-efficacy, thereby positively influencing their instructional practices.

The results demonstrate that self-efficacy among teachers was enhanced through mentorship programs as well as self-assessment among teachers. These results are consistent with the prior literature results of Ganda and Boruchovitch (2018) in reporting that teachers who receive specific training through mentorship for personal SRL utilization compared to traditionally educated teachers would improve performance. Ganda and Boruchovitch (2018) indicated improved performance in self-regulatory skill sets after targeted training, which indicate the evidence to support novice teachers needing professional pedagogical training beyond what is received from traditional teacher preparation courses through mentorship programs.

Current study finding also supported the past literature findings of Barr and Williams (2018) who reported that focused training in self-reflection by experienced educators increases reflexive cognition that impacts both performance and self-reflection. Barr and Williams (2018) stated that new knowledge through training and mentorship, application, and coaching in SRL are compounded to increase self-regulation for teaching practices and planning of curriculum and instruction in classroom among teachers. In contrast, the findings contradict past literature results of Lawson et al. (2019) who earlier indicated that the training should be focused on instructional techniques, and a more experienced educator scaffold was observed in co-taught classrooms after training through mentorship programs. According to Lawson et al. (2019), entry-level teachers need written feedback, observations, and conferences provided by the mentor before they submit reflections of learned experiences in pedagogical and self-regulatory contexts, which presents

significant conditions for self-regulated abilities in instructional planning, including colleague mentorship relationships and feedback. The findings have contributed to earlier research by indicating that that self-efficacy among teachers was enhanced through mentorship programs as well as self-assessment among teachers.

### **Implications for Policy or Practice**

This study has several implications for policy and practice, as discussed below.

#### ***Implications for policy***

The findings of this study can be applied by the state government to establish and implement various policies for preparation of teachers in schools to ensure effective learning through effective instructional practices. Mandatory mentorship programs in all schools for both novice teaches and experienced teachers can be one of the policies the state government should implement in all schools. This will ensure teachers are well equipped for self-regulating pedagogical growth.

School districts may benefit from the findings of this study by using it to implement school rules and regulations for teachers developing their teaching practices. School can also revise and stimulate various mentorship and training programs for teachers to ensure the pedagogical skills and improved for the best of the school and students.

#### ***Implications for Practice***

Teachers can use these findings learn the need for self-assessment and mentorship in improving their instructional practices. Schools may also use these findings to set various programs such as mentorship programs for professional development among teachers to enhance their teaching practices. While it is identified that educators are coached in self-regulation as a student support technique, the findings of this study have revealed how teachers themselves can

use SRL strategies to improve personal growth (Geduld, 2017). The findings have identified the active self-regulatory capacities thereby providing evidence for mentorship and professional development opportunities to circumvent the achievement gap of pedagogical application in the teaching profession among teachers. Results of this multi-case study have also enhanced the development of the abilities of self-regulated events in the holistic view of professional competencies which provides teachers the tools to construct mastery performance targets and scaffolding steps for themselves, thereby increasing effectiveness (Shunk & DiBenedetto, 2020).

### **Theoretical and Empirical Implications**

The study adopted constructivist and social learning theories (Shunk 2016). Self-regulatory strategies have been identified as significant components of the constructivist and social learning theories (Shunk 2016). The majority of evidence had focused on utilizing Banduras' (1991) stages of self-observation, judgment, and self-response within the realm of student learners. In this study, the findings have offered insights into the perceptions and implementation of SRL skills focused on self-reported pedagogical improvement in educators, optimizing the critical elements of self-observation, judgment, and self-response. Observing the translation of an educator to a learner provided by this study findings has given a new perspective on the interconnection of self-regulation, constructivist cognition, and efficacy (Panadero, 2017). This case study identified the self-regulatory approaches among teachers tasked with revising curriculum and instruction practices through Bandura's (1991) self-regulation stages, responsible for promoting successful pedagogical competencies. The findings have added to the theory by revealing the end for mentorship, self-reflection and self-assessment among teachers.

### **Limitations and Delimitations**

The study was limited by the geographical and participant content setting. The participants were a purposeful, maximum variation sample of 12 certified educators from a K-12 public school system in a rural community in Ohio. The use of Ohio state as a representative of other states may limit the transferability of findings to other locations of the United States.

The researcher did not use a diverse sample to generalize the findings. While the study focused on K-12 teachers, a limited range of qualified educators certified in grades 6-12 was available and utilized for data collection. This indicates that findings may only be applied to 6-12 teachers, as the perspective of K-5 educators was not available for this multi-case study.

### **Recommendations for Future Research**

Further studies should be conducted using a qualitative research design to include teachers of all categories in school other than only using K-12 teachers. The researcher also recommends that more studies should be conducted to investigate the need for mentorship programs among teachers for their professional development and instructional practices. This will ensure teachers are updated on their teaching practices in schools. More studies should also be carried out to examine the perceptions of students regarding their teacher's level of preparation for instructional practices in classroom to understand the need for more training among the teachers.

### **Conclusion**

This study has indicated a need for self-reflection, forethought lesson planning, enhanced self-efficacy and mentorship programs for teachers in schools. The purpose of this case study was to describe the elements of self-regulated learning utilized by a dichotomy of teachers navigating the process of improving instructional pedagogy and self-efficacy across K-12

standards. The findings revealed that teachers engaged in forethought through lesson planning, which included planning based on assessment results and keeping students engaged. Teachers also promoted self-regulated learning based on performance by assessing themselves through students' performance on assessments. self-reflection, self-assessment to adjust lesson plans and self-efficacy is positively influenced by mentorship and teachers' own self-assessments of their strengths and achievements. This study has answered the research problem by indicating strategies of how teachers can improve their instructional practices in schools including self-reflection, forethought lesson planning, mentorship programs as well as self-assessment of their performance.

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## Appendix A

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# LIBERTY UNIVERSITY

## INSTITUTIONAL REVIEW BOARD

September 6, 2022

Rebecca Young  
David Nelson

Re: IRB Exemption - IRB-FY22-23-89 THE DUALITY OF TEACHERS AS LEARNERS THROUGH INFLUENCES OF SELF-REGULATION IN PEDAGOGICAL COMPETENCIES: A CASE STUDY

Dear Rebecca Young, David Nelson,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

**Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB.** Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at [irb@liberty.edu](mailto:irb@liberty.edu).

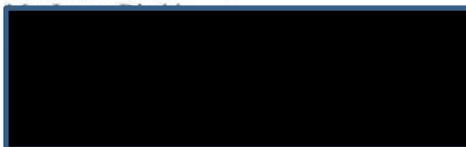
Sincerely,

**G. Michele Baker, MA, CIP**

*Administrative Chair of Institutional Research*

**Research Ethics Office**

## Appendix B



June 10, 2022

Dear Liberty University IRB,

Based on my review of the proposed research by Rebecca Young, I give permission for her to conduct the study entitled *The Duality of Teachers as Learners Through Influences of Self-Regulation in Pedagogical Competencies: a Case Study within the [REDACTED] school district*. As part of this study, I authorize the researcher to interview, observe, and collect documents from certified teacher participants curriculum design process in and around tasks of lesson development and revision. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include the use of anonymous data presented by each participant for analysis in the research study. We reserve the right to withdraw from the study at any time if our circumstances change.

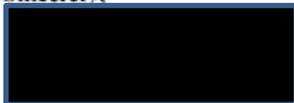
We understand that the research will include interactions of the researcher with each certified teacher participant during scheduled instructional planning or personal time for observations, interviews, and document collection. Documents are considered the personal writings, diagrams, and designs of participants. No student or district materials will be considered within this research study.

This authorization covers the time period of June 2022 to June 2023.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Liberty University IRB.

Sincerely,



## Appendix C

### Consent

**Title of the Project:** The duality of teachers as learners through influences of self-regulation in pedagogical competencies: a case study.

**Principal Investigator:** Rebecca Young, Liberty University

#### Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a licensed K-12 educator that has completed PRAXIS evaluations for licensure. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

#### What is the study about and why is it being done?

The purpose of the study is to develop a cyclical action model for novice teachers to regulate and modify curriculum development and pedagogical approaches for improved self-regulation strategies. Self-regulatory processes during modifications of curriculum and instruction that improve teacher performance and efficacy has not yet been mapped to inform mentorship opportunities.

#### What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. Interview: each participant will be required to complete one, thirty-minute interview that will be audio recorded for transcription.
2. Observation: each participant will complete one observation, conducted during the lesson design or revision process.
3. Documentation: each participant will submit revision outlines and notations of self-regulation during lesson development and revision.

#### How could you or others benefit from this study?

**No Direct Benefits:** Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include the identification of pedagogical and curriculum development gaps that are commonly found in novice teachers of all content areas. The identification of professional deficits that would otherwise allow for teachers to develop, review, and improve upon foundational practices that relate to desired student performance and positive values of self-efficacy and motivation can assist in professional development and mentorship opportunities in K-12 districts, and university instruction.

### **What risks might you experience from being in this study?**

“The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.”

### **How will personal information be protected?**

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential through the use of pseudonyms. Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data will be stored on a password-locked computer and may be used in future presentations. After three years, all electronic records will be deleted.
- Interview dialogue will be recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.

### **Is study participation voluntary?**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

### **What should you do if you decide to withdraw from the study?**

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

### **Whom do you contact if you have questions or concerns about the study?**

The researcher conducting this study is Rebecca Young. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at rmyoung1@liberty.edu. You may also contact the researcher’s faculty sponsor.

### **Whom do you contact if you have questions about your rights as a research participant?**

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at [irb@liberty.edu](mailto:irb@liberty.edu).

*Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.*

**Your Consent**

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

*I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.*

The researcher has my permission to audio-record me as part of my participation in this study.

---

Printed Subject Name

---

Signature & Date

## Appendix D

### Recruitment Verbal Communication

Hello RAMS Educator,

As a doctoral candidate in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in curriculum and instruction. The purpose of my research is to better understand the perceptions of teachers' self-regulated learning strategies in personal pedagogical growth, and if you meet my participant criteria and are interested, I would like to invite you to join my study.

Participants must be 18 years of age or older, who have received the base undergraduate degree in the field of education with valid certifications for classroom instruction and content valid by the state of Ohio. Participants, if willing, will be asked to participate in an individual interview and observation of lesson revision providing personal documents pertaining to self-regulation. It should take approximately 90 minutes to complete the procedures listed. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

Would you like to participate? Great, can we set up a time for an interview and observation? The interview will take approximately thirty minutes. We will then move directly into me observing your process while you document and narrate your perceptions while revising a lesson plan. This may last up to sixty minutes.

[No] I understand. Thank you for your time.

A consent document will be given to you one week before the interview. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document and return it to me at the time of the interview. After you have read the consent form, please complete and return the survey. Doing so will indicate that you have read the consent information and would like to take part in the study.

Thank you for your time. Do you have any questions?

## Appendix E

### Interview Protocol Questions

#### *Individual Interview Questions*

1. Please describe your typical lesson planning session. CRQ
2. Please explain the process of how you measure the success of your classroom instruction.  
CRQ
3. What are the most challenging aspects of designing a successful lesson? CRQ
4. Describe your best approach for improving a lesson that was not successful. CRQ
5. Please talk me through your thoughts/ experiences of how you work through your lesson improvement process. CRQ
6. How do you decide if an element of your curriculum or instruction needs to be modified?  
SQ1
7. Please describe the process you use when reviewing your classroom performance. SQ1
8. Describe the process of modifying an unsuccessful lesson component. SQ2
9. What do you perceive to be the best strategies or steps to follow as you navigate the process of lesson planning? SQ2
10. Please describe the role feedback has in your lesson design or delivery process. SQ2
11. When you develop curriculum, what elements of the design process provide feelings of positive self-efficacy? SQ3
12. What experiences with your professional mentorships have positively impacted your ability to self-regulate? SQ3

## Appendix F

### Sample Participant Transcript

Speaker 1:

Start out with some basics here. How many years have you taught?

Speaker 2:

I believe this is my ninth year.

Speaker 1:

Okay. And the highest degree that you've personally

Speaker 2:

Earned? Master's.

Speaker 1:

Okay. And what content areas are you certified

Speaker 2:

For? Actually all high school science. So I have the geez, my brain. At the end of the day I was chemistry and biology. And then I went back, took a pH, I only needed one physics class, so I'm certified for all seven, 12 sciences. I can teach any.

Speaker 1:

Okay. And current grade level that you work with?

Speaker 2:

Ninth, 11th, or 12.

Speaker 1:

Okay. So could you just describe your typical lesson planning session?

Speaker 2:

Hmm. my lesson planning session. So like what I do in the day or how I plan a

Speaker 1:

Lesson. How you would plan a lesson, How do

Speaker 2:

You go about it? How you do a lesson. I am well versed in the standards, so I know the standards. So I think about the content that I need to teach and then I generally try to think about

the big ideas that I need to convey to them and then how I can have them practice those big ideas. So when I put together a lesson, there'll be some teacher direction in terms of, you know, direct conveying of information. But then I always, even when I chunk up the lesson, let's say there's a big picture concept, it's gonna take two weeks. Even within a daily session, I try to at least 50 50 so that it's, you know, some teacher direction and then student direction. And then if I can put a lab, I'll spend probably a least a third of that total lesson planning time. A third of it will go into different lab activities. So I really tried to think what do I want 'em to know? What do I want 'em to be able to do? How should they be able to apply it? And then kind of figure out how to break that up. Okay. Into the different days.

Speaker 1:

Right. So let's say you designed a lesson and then you taught it. Yeah. How would you measure the success of your instruction? Do you have a process for

Speaker 2:

That? I normally do little exit ticket type things or use quizzes for just quick evaluations. Did they get the concept I wanted 'em to have, wanted them to have, And then labs, I'd look at their labs to see can they do the labs that I'm asking 'em to do? Can they do they have the required skills that I wanted them to get out of the, the lesson? And I make the kids, I'll do a pre and a post. So then I kind of base it off that. And then you look for extenuating circumstances. So if I have a student that I think should have gotten more, you know, were there absences involved did they miss a key piece of instruction? Was I having a bad day?

Speaker 1:

<Laugh>. So

Speaker 2:

Sometimes I, I do look at myself too. I know I'm a little bit more fatigued by the end of the day, so it requires a lot more energy and a lot more thought. Although this year I have all the freshmen in the morning, so for my freshman courses it goes pretty smooth. And then I have a brand new course at the end of my day, which requires, So actually I guess I have a little bit of downtime during lunch, but then I have to, I kinda have to be in my A game most of the day instead of, I don't know. I think feel sometimes you just kind of drain by the end of the day, but now I have something brand new at the end of the day, so I have to perk up. So anyways, to answer your question I do a lot of questioning of the kids to see are they getting it day to day? Are they getting it at the end of the week? And then, you know, the big summit of assessments, the test. But normally by the time we get to the test, I've done homeworks, quizzes, exit questions, I, I know where the kids are kind of sitting, so Okay.

Speaker 1:

I dunno if I'm

Speaker 2:

Answering your question.

Speaker 1:

No, you're fine. Okay. Yeah, thank you. So let's say that you had a lesson that was just not successful. What would you say is your first approach for improving that lesson?

Speaker 2:

Hmm. Thinking about what I did and then probably making notes the day of. So I guess you're saying lesson like specific to like particular day as opposed to a whole unit lesson?

Speaker 1:

Yeah, as if today's lesson.

Speaker 2:

So if today didn't go well, even more so if it's a class that I repeat like my freshman, I have four sections. I mean I will like a dime like change what I'm doing the next period. Like that didn't go the way I wanted it to. And a lot of times too, especially with a lab, like wherever the hiccups are, sometimes I'll adjust real quick and reprint or else I know hey, put this on the board so that you know, these things are mentioned and discuss before the next group comes in. So I guess I would say I try to tweak in the moment if I can, if it's a class and if it's not, if it's one of my upperclassmen where I only teach it once, then I would make notes so that I know okay, next year don't do it this way, do it a different way, look for something new. And if I think that they totally miss the point, then I'll just have to do a reteach, you know, think the next day instead of moving forward I'll, you know, figure out another way to kind of work through material and do it both multiple classes you get a little bit of a wiggle room to kind of adjust in the moment. So.

Speaker 1:

Okay. Would you say most of your improvements go to like your resources or would most of your improvements go to how you taught through your

Speaker 2:

Resources improvements? You mean making a lesson better from one to the next? Yes.

hmm. That's a good question cuz I do use a lot of the same resources. So it was funny when you said okay, find a lesson and then think about how you might wanna fix it. And I was flipping through and I thought about it, I was like, honestly I've taught the same stuff now for seven years. So it's like a lot of the resources I have been in a process of tweaking. So I was like a lot of my resources I really like. But I would say when you've the first three, four years and you're just constantly finding new and new resources and I made a point this summer to actually go through and skim out some of my resources. So I would say it has been a gradual process of refinement in terms of finding new resources and improving the resources I have to get to a place where I'm happy with the way they work and feeling like the kids don't have as many of those, this doesn't make sense or not understanding the application.

I work really, really hard in trying to make sure that they understand the applications from the lab and how they apply into their course material. Cause I feel like especially with science curriculum, that can be, there can be a real disconnect between we get to go play in the lab and oh yeah, she's trying to teach me something and trying to make sure like they, they mesh really

well. So that's, and it's a little bit less now cause I've been teaching the same content now for forensics, I gotta say it's a constant game of finding new resources cuz it's a brand new class right out the gate. So the way you handle a class you've taught for nine years versus something brand new is probably totally different. Cuz I feel like every single day I, I'm pulling up new resources for forensics and then I'm using them for the first time. So now I'll go into the refinement where I have to look more at how did I teach it, how, what do I need to fix on it type stuff. Okay.

Speaker 1:

You mentioned that sometimes you have to make it mesh what they do in the lab and how you taught it. Have you had an experience or a certain method or process that has worked for you to make things mesh?

Speaker 2:

Finding the labs that really, finding labs that really focus on a few key points and not trying to find, and this is actually a difficult place, trying to find labs that are complicated and make them think, but at the same time it's easy to see that transfer of information. And what I've realized is that what I think is a difficult lab, so like I want my honors kids to be challenged doesn't always have to be as abstract and difficult as I think it needs to be because just the step from book work to application in the lab often is enough of a jump in terms of difficulty that even the honors kids get stopped a little bit. So I would say I've really tried work on using more frequent labs but having the scope of the lab be a little bit smaller so that the information that I want them to get out of there, like jumps in their face like we're working with matter separation of matter, which doesn't seem super big, but then I put 'em in lab with an unknown and say okay, you gotta figure it out, you gotta use your methods of separation to figure out all of your, you know, your mixture.

You have three or four different unknowns in there and it kind of stops them because, but they get it. Like if you know someone were to walk in and say, what are you doing in lab? They would say, Oh we're figuring out our unknown, we're separating the different parts. You know, they would be able to say point blank, we're dealing with matter, we're dealing with the separation of matter. Which seems so simple in to say, but it's more complex when they, so yeah, just trying to make the labs more focused specific to the concept you want them to get. There you go. Okay.

Speaker 1:

<Laugh>. So then how did you go and make them more focused?

Speaker 2:

Oh, probably, I mean, and again, just years and years finding them, having the kids practice them and probably having the kids struggle with them or not know what they're doing. Cuz the biggest thing that burns me, cuz every time I do an observation I always have them observe the lab just so that they're seeing student directed activity and when they come in and someone would say, What are you doing today? And the student's answer would be like, I don't really know, we're just playing with this stuff, you know, and I, it would like fry me and I'd be like, oh my gosh, it's like title on the page, it's on the board. Like we've been talking about it for the past week. And so I think I just have been purposeful in trying to make sure that I'm drilling into them what they're

doing, why they're doing it, and in the discussion before they do it, after the discussion. And that's another thing. And this is totally on the educator making sure like, like we're doing our third lab in this section today they did their third LA third lab. But I continuously in classroom discussion go back to elements from the second lab and the first lab and how they apply now to the third lab. And so constantly reminding them of how the different pieces, parts all fit together to kinda, you know, come to that final summation.

Speaker 1:

So Okay, so if you do have something that's unsuccessful, is there a certain process that is your go-to to start to fix what went wrong?

Speaker 2:

Sure I go back and I look at what I gave the kids, I read it myself, figure out where they were stumbling and then try to figure out where the revisions need to be. One, I have to ask myself, is this really an activity, a lab, a process that is important? And if I deem yes it is important, then I, it's kinda like going back to the drawing board like, okay, like maybe the rubric cause I've had, you know, presented them with things to do and maybe it's turned out not the way I want it to be. And so it's like, was the rubric not well explained? Were the steps not explained? And then you, I just have to revise it that way, I guess I feel like I should have more. What was the question again? Just how do you, what's, what are your steps?

Speaker 1:

Do you have a, a certain process that you go through?

Speaker 2:

Yeah, I mean so that's what I do. I just is the activity, the activity I want to use in that place. If it is, then I have to go back and look at the activity itself. How can I present this to the students differently? How can I word it differently? And a lot of times it is, it just needs more clarity perhaps in the way that it's presented or the way it is on paper. And sometimes it's just a matter of, oh they needed more time or I didn't give them as much detail, I wanted more detail than they gave me. So I need to make a rubric that's a little bit more detailed so that they understand that I want these different pieces in there. Cuz it's a hard thing as a teacher, you give a project, it doesn't come in the way you want it to be, but then you look at what you're kind of grading them against and you realize, oh, what I thought I asked you for was not what the paper actually is asking you for. And so then that's on me and then I have to give them the points and I'm like, but this really isn't the quality I wanted. So then I go back and I'm like, no, I need to write this a little bit more specifically on the rubric so that I get the quality that I want. Yeah.

Speaker 1:

So if you had to give some advice for someone struggling with lesson planning, is there a good strategy or a certain list of steps that you follow?

Speaker 2:

The internet exists, use it. One <laugh> like for real I, you know, like if I wanna do a new lab, there's a concept I'm covering forensics, whatever it might be, that's my newest one. So if I have

a lab I need to do, I do, I just, I kind of just queue up different things on the internet. I print and then I myself have to do my own little research, read through 'em, look at 'em. If I have enough time I'll try to go through activities on my own. If I don't, I try to just make sure that I've read thoroughly enough that I feel like it's in a good place to give to the kids and see what they kind of do with it. But I definitely, I mean books, I love books I, and, and sometimes textbooks come with stuff, you know, to kind of get started.

But a lot of times the PowerPoints provided by textbooks are really, really vague. They do not have the specific points. So even if I do utilize someone else's PowerPoints or books, PowerPoints, again researching and that might be more of a sciencey thing. But I feel like if I'm gonna teach something or present something, like I wanna be spot on, I don't like students asking me, well they're always gonna ask you a question. You don't know all the answers to everything. But I don't like having any information on my slides that I feel is too vague or not a hundred percent correct. So I would say it's, it's almost a constant state of reteaching yourself and making sure you're up to date. Especially in the science world cuz things change. Making sure you're one step ahead of them cuz they're looking at the internet too and so they know all sorts of stuff. <Laugh>. But yeah.

Speaker 1:

So for you, what do you think is the most challenging aspect of designing a successful lesson?

Speaker 2:

Time? I mean I have lots of ideas for like super cool labs and I either feel like there's limitations for setting up activities, staging activities, or even just class time. 43 minutes is, is a quick amount of time to have them set up, conduct an experiment and then try to clean stuff before the next group comes in for 40 minutes. So trying to really chunk my, my activities into this 40 minute cookie cutter does not work well. But the space does not provide a whole lot of extra space to like leave stuff, you know, the kids can't leave their stuff and come back tomorrow and find it cause there'll be another group. So I would say time with planning, time with conducting and time with cleaning like, and that that is definitely just a science teacher thing. Cause I know you're talking to different teachers. I mean it is though. It's, you know, I just did my observation. I told, you know, my administrator, I'm here an hour and a half before school. I tend to stay two hours after school and yeah. So it's time. Okay.

Speaker 1:

So let's talk a little bit about feedback. And you mentioned you did, you know, pretest, posttests, you've done exit tickets, but we can extend feedback to a colleague. We can extend feedback to something an administrator has told you or a mentor mentee relationship that you've had over the years. Has there ever been a situation where feedback played a role in how you design your lessons or deliver your lessons?

Speaker 2:

Hmm.

Thinking <laugh> feel like I had one observation years ago where they said, Oh you should use more of, you know, the different words. Like I think they were looking for key words for me to use maybe in the discussion with the students in terms of upping the level of difficulty. And I

remember thinking to myself like the whole activity and what I was asking them to do was an upper level. Like I just didn't use the keywords. I thought it was kind of comical and that sounds horrible and I don't think that big of myself, but I was just like really? Cause I'm pretty sure the whole thing was like at or above, but let's see. I've been told I transition well so that's a good thing. That's smooth. Just, you know, I feel like I'm gonna go because observations only occur once a year and you're so spun on.

I don't know that, I don't know that from an observation with an administrator that I've really received feedback. I think the best feedback and information I've gotten from people are, are definitely colleagues. And it's more of just mulling around, you know, saying, Hey, I did this and it didn't work well, it fell on its face or I didn't get the results I wanted. And then just kind of having that discussion, you know, what would you do in this situation? How could I, you know, try to improve this? So I would say I would, I mean if you're just asking generally like where I feel like I get more feedback that I can incorporate into my lesson planning changes or whatever, I would say it's definitely colleague based, peer based and especially like the other science teachers, you know, like what, Oh yeah, we missed him. We had a good meeting on friends. Oh anyways. But yeah I would say definitely from co from colleagues and specifically within the science department.

Speaker 1:

Okay. So have you ever had a mentorship, like with a colleague or with someone even, you know, as you were a developing teacher that helped give you some advice or some techniques to regulate your process of how you plan or how you improve, how you teach your lesson,

Speaker 2:

How you regulate? Say that part again.

Speaker 1:

So how you self-regulate your way through developing a successful lesson or how you even self-regulate, looking back on how you taught it and how to

Speaker 2:

Improve. And this might be because I didn't start teaching until I was almost 40, but I think the, the self-awareness and the self-regulation, like I <affirmative>, I think that's one of the reasons why I am here so much. Because everything I, I do. So I don't know. No, and I think that's just me and that is just the way I work. I don't know that I've had anyone that's specifically made. I think if anything I, I have been told not to spend so much time overthinking the process because I just, I am constantly going over how did it go? How did I do, how did they do? And sometimes I just have to push forward and say just, you know, like, okay, it's time to step away from that now. Cause I could spend all day I, I, I could, I could like, like I said, I do pre-post and I absolutely love running that data.

Like if I had an extra five hours of my day, I would do nothing but look at this is what I did, this is how you know the information I got. But you can make yourself absolutely crazy that way. So if anything I've been told to, to let it go a little bit <laugh> to let that piece go. But again, I would say, I think part of that too might be age that I came into this into teaching much later and I had already had my own children and they were actually mostly, you know, into their teenage years

by. So I think a lot of that is just a natural process. You know, you did this, you put in a, you got out B, B wasn't what I wanted, I wanted C so what am I gonna do to change? And I think that's just being self-aware in multiple aspects of your life. And I was already kind of developed in that area when I came into teaching. So I don't know that that was really a big, Yeah.

Speaker 1:

Okay. So on that note, let's talk a little bit about some self-efficacy. Okay. And when we say self-efficacy, we mean your personal value feelings of positivity for how well you were professionally prepared. So if you are developing your curriculum and if you're kind of, you said I give you a give me B, you put out C right? You know is there anything that you do in your design process or how you look back at yourself that really gives you positive self-efficacy? I do this so well in my professional, my professional approach.

Speaker 2:

I think anytime I ask a student a question and they can give me the answer I want that it makes me feel good. You know what I mean? Like, anytime I can present them with a difficult question and they can piece it together with, you know, maybe a few prompts, but you know what I mean, then I feel like that's a good day <laugh>. But I also feel like seeing students come out on the other side, cuz I think teaching can be really, really hard and you don't always get that positive feedback, but it's really focusing in on that positive feedback that you get, which may come not every day, but again trying to really, really, really look for those positive affirmations that what you said or did San in, you know, that they, they realize that. And then sometimes you get the really big positives like, you know, running into a graduate who's now majoring in, you know, nursing and says, Hey, that an A and PHS class was really good, you know, and it's like, oh, like something I did did matter. You know, it helps you later on in life.

Speaker 1:

Do you feel like you get any positive efficacy from something you do while you prepare?

Speaker 2:

Oh, while I prepare, yeah. I mean I get excited if I put together a fun lesson, like I'm excited and I think that transfers then to the kids. I, but that might be my general outlook on life too. Like I, I think I try to just dwell more on the positive <laugh>, otherwise the negative will bring me down. But like I do, I get excited and then I think that excitement transfers so then the kids get more excited. So then if I can feel really good, hey, and I think for me feeling good is when I've put in the time and I've spent a lot of time preparing and then I feel confident about it. So probably having that confidence backed by my resources that makes me feel good and then I can move forward and hopefully, you know, they'll pick up the positivity with me and move forward. So That's

Speaker 1:

Awesome. All right, so you brought a lesson. Oh yeah. If you just kind of wanna verbalize you know, what you're thinking as you would either go through and make changes or, oh thinking like if you wanted to develop something new with it, you just kind of walk through what you would like to do with this lesson.

Speaker 2:

Oh, okay. So this is an accuracy and precision lab. So it's kind of forcing the kids, it's not super complex but we, it comes off of the heels of having learned and discussed significant figures, reading measurements off of different apparatuses. And so it's kind of making them apply that skill now to the lab. And I try not to give them a lot of pointers while they're doing the lab cuz want them to be thinking about it and forcing them to kind of use those rules that we've talked about, put it into practice again, taking that information and actually putting it into the application phase, which there's a, that's a difficult challenge for a lot of kids at this age. Anyways, so they're supposed to, you know, record this is gonna be totally technical, but with that one dec decimal plays past the graduation, you know, past the line that they're given on the instrument.

And so it's difficult from the sense that the kids, you know, they've done a couple baby steps up to this but then walking that fine line between in like giving them prompts and then just point blank saying like, Hey you're not doing this right <laugh>. So, and this is something I've kinda worked with for a long time, so it's, I feel like the layout's pretty good, although, I mean there are still some, some questions cuz I know where the kids kind of get stuck and sometimes, and I don't like it when they get stuck on just the breakdown of the sentence. Like they don't understand what they're being asked to give if they're get lost in the content, like what or the answer. That's one thing, but I don't like it when they don't understand the question. So that would probably be, there's a couple of questions that I know specifically, you know, like it says exam on the gram scale of the balance in terms of grams, what are the smallest graduations?

And believe it or not the word graduations throws them off. And I am one that I try to encourage them to expand their vocabulary a little bit even though graduations might not be considered a super sciencey word, you know what I mean? I struggle with wanting to change the words so that I'm kind of forcing them to think about bigger words. But that would probably be one thing if I just said to the, what are the smallest markings? So that would probably be a simple change I could make. Is that what you want me to do? Kind of go through this specifically? Yeah, mark it up. Yeah. Okay. So specifically like sometimes just finding like a word sometimes throws them. But there are clues on here like use, you know, significant figures in units are required but like they won't.

And that is one thing, especially in the science classroom getting them to read the directions. And so I do, you know, try to underline or bold point things. But I still kind of know like where they'll make errors and so sometimes I even like when I give them the lab, I'll have them star or highlight things like, Hey by the way make sure you know you pay attention to this. Doesn't always mean that they're gonna catch it. Okay so this is actually a two day lab. So they do the first part, then they do the second part and then they gotta move into the math. And this is where probably a quarter of the students really struggle. So not only am I asking them to understand concepts, put it into practice and use those concepts, but now I want them to mathematically manipulate that that information.

So I'm asking them to learn, apply and then kind of cross-curricular. Now you actually have to be able to apply math. And so what I find a lot with the freshmen is that just because they know the math and they understand how to solve for things in math class doesn't mean that they can come into the science class because now it's like a word problem and it's not just a point blank like three times four, it might only require you to multiply two numbers together, but they don't conceptually necessarily understand where they're getting the numbers from. And I don't know

point blank. So this is really making me think about this now. So like calculate the mass water as measured by the balance calculate. So they see the word calculate and they automatically think that they have to start using a formula and they will literally pull formulas out of the air that make no sense.

And I'll see number and I'll be like, why did you do that? What is that? So one thing I could do is just remove the word calculate <laugh> and just say what is the mass water as measured by the balance? That actually would be that much simpler. And the reason it says calculate, it's not like that word's in there by accident, but to get the mass of the water, you have to take the mass of the empty graduated cylinder and then subtract it from the mass of the filled graduated cylinder. So there is a calculation, it's just that it's subtraction, it's not like there's a formula to get it, but some of the kids will try to figure it out by formula. So the question is the mass of the, and again they understand like if you asked any fifth 14 year old, how do you get the mass of, you know, the empty bucket versus the bucket with filled with water.

They would say we'll just subtract off the mass but you put 'em in lab. It's like they have no idea. They're like, I don't know how to get the mass of the cylinder and I can sit there and I don't give them answers during lab. I ask them questions, Well you know, look at your table, what do you have? Will I have the mass of the empty cylinder? And do you have the mass of what? Oh the cylinder with water. So how do you figure out the mass of you know, just the water? Oh I don't know. You multiply, no you don't multiply. Like these are, these are conversations I've had with the kids so I could put a little star there and just say, but I don't necessarily wanna tell them to subtract cuz again that's one of the pieces you want them to actually think about it.

But maybe just by pulling out the word calculate, I don't know. I could see next year if I just said the mass water is measured by the balance, if they looked and saw what they had, would they figure out that I don't know. And then it does say part one, part two and part three cuz part three is unknown. Then I give him something that they don't know and they have to figure out the mass and the volume and then actually figure out the density of the unknown. And then I made them calculate percent error which was just, you know, over the top for at least another, you know, <laugh> portion of them. And again, this is not conceptually information that is too hard, like this is definitely a age appropriate information. It's just this is an early in the year and their ability to apply mathematical concepts that they know to information that is new is very, very challenging. So I guess maybe in wanting to tweak this, just look at a way the, a few of the words are used without giving them more information. Cause I don't necessarily want to spoon feed them. I want them to start to become more independent and be able to calculate. They do get two days and then I'm pretty lenient with giving 'em an extra day just to run the math if they need an extra day. So two days in lab.

So again, I guess it would just come down to maybe clarity. Where can I maybe clarify things without leading them too much? Cuz I don't, I don't want to make things easier. I want them to learn how to think, you know and be able to use their, because they feel better when they figure stuff out. They feel better as opposed to me just telling them the answers. You know, if I let them struggle, they get more excited when they figure it out, then if I just tell them how to do stuff. But yeah, I okay. So yeah, I guess just looking at a few of the key things, <laugh>, thank you.

## Appendix G



### University teachers' self-reflection on their academic growth

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