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The Realm of Self-Regulated Learning (SRL): An Examination of SRL in an Elementary Classroom Setting and its Relevancy to Trends in our Current Curricula

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THE REALM OF SELF-REGULATED LEARNING (SRL): AN EXAMINATION OF SRL IN AN ELEMENTARY CLASSROOM SETTING AND ITS RELEVANCY TO TRENDS IN OUR CURRENT CURRICULA

by

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ABSTRACT

Teaching and instructing students is a necessity, but creating ways to challenge them is a priority. This thesis focuses on Barry Zimmerman and Timothy Clearly's Self-Regulation Empowerment Program (SREP). This model uses a problem-solving approach in establishing Self-Regulated Learning (SRL) strategies in students' learning.

Stemming from interdisciplinary questions such as, "what will help students be successful in and outside the classroom?" and "how do teachers challenge students without stifling their creativity?" this purpose of this study aims to explore the realm of Self-Regulated Learning (SRL). The present study further examines if SRL strategies and practices foster learning and are prevalent in current trends and curricula such as, Marzano and Common Core. After thorough analysis of student observations and coding of data, the findings concluded that SRL strategies fostered student learning. Students studied were more readily motivated to regulate their learning and attempt challenging tasks. Moreover these findings indicated an increase in student success and metacognitive knowledge, as the students were provided with more opportunities to engage in self-talk, self-reflection, strategic planning, and goal setting. Results suggested the flexibility of the SREP model and its application to current instructional practices. Implications and recommendations for further research into the SRL model across other disciplines are also presented and discussed.

DEDICATIONS

For my loving family, who have instilled in me the value of hard work and the importance of an education. No words can describe the impact they have had in all aspects of my life. They continue to push me to be the greatest person I can be.

Thank you.

For my mother, who has implanted in me a love for teaching. With her empowering work ethic and consistent support and positivity, I couldn't have asked for a better role model.

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For my father, who does not take no for an answer. Through endless stories and analogies, he never failed in teaching me how to be successful on my own.

Thank you.

For my siblings, who make my day every day with their unique personalities. Not a day goes by without a special, encouraging hug for moral support. Their presence is all I need.

Thank you.

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CHAPTER 1: INTRODUCTION

Background and Literature Review

In *Collateral Damage*, authors Sharon Nichols and David Berliner (2007) address how policymakers have increased testing and testing protocols to increase student achievement. The law makers of the *No Child Left Behind Act* passed in 2001 feel that these tests will close achievement gaps, increase graduation rates, and decrease dropout rates (U.S. Department of Education, 2001). They are also set in place to push teachers and students to their fullest potential. According to Nichols and Berliner (2007), however, high-stakes testing has fulfilled none of those promises.

Learning takes place in a variety of ways and is not strictly achieved in an authoritative fashion. In a confined atmosphere, students cannot be expected to succeed, especially with such high expectations set in place. High-stakes testing limits the students and their capability of learning. "…We often see the test overpowering teaching, resulting in narrowing the curriculum offered to students to just what is on the test." (Nichols & Berliner, 2007, p.12) How can students be expected to become independent learners, if they are spoon-fed how to answer high stake test questions? Through the preparation for state tests, students are learning strategies for the test and only the test. My experiences as a pre-service teacher have been influenced by the emphasis on testing. I noticed many trends and initiatives where students were not being challenged. Their creativity was stifled and student output was not encouraged. These students were dependent on the teacher and were not problem-solving on their own. Consistently and without fail, I saw how worksheets and test after test were used as the only tools for students to learn and master difficult topics. In a way, these students are being sent out into the world

blindfolded because they know nothing outside of these tests. How can change happen if no one is listening and learning?

Before my active participation in an actual elementary class setting and my pre-service hours, I was not fond of my teaching philosophy or my teaching beliefs. I was not sure what theory I sided with the most or views most teachers held and also neglected. I came across a few schools that had adapted to new models of teaching based on the Constructivism Theory in education. Focusing on a collaborative, hands-on, discovery approach to learning, this philosophy makes learning relevant to students. As educators, making the learning relevant is what motivates students to become active participants in their learning process. As students become more engaged in the classroom, teachers become more passionate for teaching and educating. Within this philosophy, motivation works both ways. The teacher motivates the students and in return the students motivate the teacher to continue to stimulate learning and provide positive energy. My experiences as a pre-service teacher have caused me to highlight the significance of a passionate teacher, as well as the significance of creating student independence. I have witnessed how such rich qualities of character correlate with and directly impact the success of the students. With these thoughts, I delved into the realm of creativity and strategies that promote the success of students. What will help students be successful in and outside of the classroom? Where are these strategies and why weren't they imbedded into the curricula? I came across the theories and strategies of the Self-Regulated Learning model (SRL) and immediately explored the topic. Research showed that this model mirrored the tenants of the Constructivism Theory, which also paralleled my newly founded teaching philosophy. Autonomy, motivation,

self-improvement, metacognition, self-reflection are all aspects of self-regulated learning, but what is self-regulated learning? What products does it yield?

According to Barry J. Zimmerman (1988), "…self-regulated learners proactively seek out information when needed and take the necessary steps to master it." Self-regulated learning requires learners to be intrinsically motivated to achieve the goals they set for themselves and self-monitor themselves through the process of achieving these goals. Therefore, these learners are mastering the concept of metacognition, time management skills, and are expanding their expertise on various subjects. SRL theories and strategies promote student control over their own learning. Through the creation of these newfound learners, SRL also promotes and fosters a positive learning environment and crafts an effective model for classroom management. Teaching and instructing students is a necessity, but creating ways to challenge these students is a priority. As educators, we need to understand that we are valuable and vital resources for our students, not just authoritarian classroom babysitters who tell students right from wrong. We need to guide them through the thinking process, while meeting their academic and developmental needs and meeting state standards. A passionate teacher will do whatever possible to create and maintain a balance within the classroom.

Before students can begin to develop their own learning goals, they must truly know who they are as learners. They must be able to control and organize their thoughts, behaviors, and emotions in order to be the drivers of their own learning process (Paris & Paris, 2001; Zumbrunn et al., 2011). To become successful life-long learners, students need to know what works for them and how they learn. Knowledge of students' self is an essential component in Self-Regulated Learning models (SRL) (Clearly & Zimmerman, 2004; Zumbrunn, Tadlock, &

Roberts, 2011). In self-regulated learning, students are immersed within their own metacognitive, behavioral, affective, and motivational domains (Clearly & Zimmerman, 2004; Torrano & Gonzalez, 2008; Zimmerman & Martinez-Pons, 1988). Self-efficacy, task value, and motivation are all integrated into the SRL construct (Bandura, 1993; Clearly & Zimmerman, 2004; Horner & Shwery, 2002). How self-regulated learners utilize their own abilities and execute them effectively to create their own goals for success is the core of self-efficacy. Students who have high self-efficacy beliefs generate their thoughts, feelings, motivation, and the perceptions of others in a manner that emphasizes autonomy and self-improvement (Paris & Paris, 2001). Students' beliefs about their own abilities may help them become proactive learners and consequentially influence their motivation levels (Horner & Shwery, 2004; Montalvo & Torres, 2008). Instead of relying on extrinsic rewards, self-regulated learners are intrinsically motivated to monitor their personal progress, while developing a deeper understanding of utilizing effective strategies to approach their problems (Perry, Hutchinson, & Thauberger, 2007; Perry, Nordby, & VandeKamp, 2003). These motivational factors affect the student's purpose for the task at hand. Students with high self-efficacy tend to choose tasks that are challenging yet attainable, even though the result may conflict with their familiarity of the content. These students are also confident enough to make decisions based on outcomes of the tasks, whether they have succeeded or not (McCombs & Marzano, 1990). They are ready to effectively put the learned strategies to work. They have regulated their beliefs and expanded their self-expertise through their motivation, self-efficacy judgments, and perceived task value. Through the development of these qualities students have achieved the agent of self in their own learning

process (McCombs & Marzano, 1990).The discussion of the qualities of SRL is a key component in the context of defining the term and its impact in student learning.

Over the course of 20 years, many cyclical models have been developed to represent the characteristics of SRL (Zimmerman & Martinez-Pons, 1992; Zimmerman 2000). Self-regulating learning has become a popular focus and much research has gone into establishing effective strategies that increase academic performance through these models. Self-regulated learning yields goal oriented, confident, and independent life-long learners. According to Barry J. Zimmerman (2000), self-regulated learners proactively seek out information when needed and take the necessary steps to master challenging, yet attainable tasks (Clearly & Zimmerman, 2004; Zimmerman & Martinez-Pons, 1988).

In most SRL models, there are three distinct stages: forethought and planning, performance monitoring, and reflections on performance (Clearly & Zimmerman, 2004; Horner & Shwery, 2004; Zimmerman & Martinez-Pons 1992; Zimmerman, 2000). Self-efficacy perceptions, task value, and motivational strategies are all evident in the forethought stage, where the initial goals for academic success are formulated. To construct effective goals toward success, students must first strategically plan how to achieve them and then implement the strategies necessary to achieve goals set. The ability to direct and control their mental processes when given the actual task to perform is a part of the performance monitoring stage of SRL. Most models combine the critical tenet of self-efficacy in self-regulated learning into the first phase of SRL: forethought and planning. Students' perceived self-efficacy toward their academic success influences their ability to set attainable goals (Zimmerman et al., 1992). Through the degree of their motivation and of the set task value, self-regulated learners will

select, categorize, and analyze varying tasks according to their strengths and weaknesses (McCombs & Marzano, 1990; Perry et al., 2007; Perry et al., 2003; Torrano & Gonzalez, 2008).

In the performance-monitoring stage, learners are metacognitively monitoring the use of these strategies and how effective they are in the progress of attaining their goals (Zumbrunn et al., 2011). The planning that took place in the forethought stage is now being evaluated by the self-regulated learner. Here, the learners are constantly accessing their cognitive domain by acquiring new strategies and adapting them to their prior knowledge without falling back to ineffective familiar strategies. (Torrano & Gonzalez, 2008; Zumbrunn et al., 2011) Research supports that modeling and scaffolding within this stage of SRL are crucial to the development of strategic planners and thinkers (Horner & Shwery, 2002; Paris & Paris, 2001; Torrano & Gonzalez, 2008). Throughout this interactive process the student is consistently practicing internal speech.

In the last stage of SRL, reflections on performance, internal speech is utilized the most as the students reflect upon their goal and task executions. They evaluate and make critical judgments of their use of strategies based upon the outcomes of the task (Clearly & Zimmerman, 2004; Torrano & Gonzalez, 2008; Zumbrunn et al., 2011). Exercising their mastered ability to control their behavior, students use the outcomes as a learning experience for future academic achievement.

SRL yields learners who are motivated to take on any challenge, without the fear of failing the task presented. Self-regulated learners are confident and responsible enough to create and set goals by themselves and accomplish these goals. They also monitor and evaluate the use of the learned strategies and plan for future academic endeavors. Goal setting, planning, attention

control, self-motivation, flexible use of learning strategies, self-monitoring, appropriate help-seeking, self-evaluation, and problem-solving skills are all interactive strategies that promote the success of SRL in a classroom (Horner & Shwery, 2004; Zumbrunn et al., 2011). The act of goal-setting and establishing self-efficacy teaches students how to control their behaviors. They should be so motivated in a task and the act of learning that they have no time to allow outside factors to interfere and disrupt their focus. Controlling behaviors, disruptions, lack of focus, etc., are all problems that permeate across many classrooms and all grade levels. Therefore SRL is not only effective for students, but also beneficial for teachers. Creating and maintaining this positive, creative, and encouraging classroom environment not only ensures that all students are exposed to the best education possible and that their developmental needs are met, but also ensures that time is not spent on trivialities and constant refocusing.

Because SRL yields such positive learners, these positive attitudes permeate throughout the classroom environment where it fosters the collaboration between teachers and students (McCombs & Marzano, 1990, Paris & Paris, 2001). In these classrooms, the environment is diverse and allows for instruction to reach all types of learners. This differentiated instruction will be beneficial for all teachers, since sometimes the struggle arises when trying to accomplish many tasks in limited time spans.

The increase in autonomy causes the control of the learning processes to shift from teachers to students. Since students are investing in ownership practices they are expected to monitor their own learning. The students are engaged in classroom tasks that spark their personal interests and stimulate their curiosity; this in turn encourages them to seek challenging tasks.

Trends and Initiatives

Marzano.

Marzano's theories have become an instrumental component of instruction in many schools across central Florida. Implemented in most curricula, his instructional methods can be used in any classroom. For example, creating learning goals for students with appropriate learning scales and giving students the opportunity to self-assess their skills is beneficial in meeting personal self-development goals.

Robert J. Marzano's pedagogy is similar to the construct of "self" presented in Self-Regulated Learning (SRL). According to Marzano, students' will to engage in self-regulated learning and associated strategies is not only critical, but essential to the process of SRL. When attaining the "self," one first develops the will and then the skill (McCombs & Marzano, 1990). In his discussion on SRL, Marzano (1990) further mentions the importance of students as vital decision makers who have the "power of choice." His ideas in this discussion mirror his theories in his book, The Art and Science of Teaching.

Common Core.

As curricula change and schools are slowly adopting the new Common Core initiative, the need to find relevance between SRL and Common Core is inevitable. Even though there is insufficient research directly correlating SRL and Common Core, the goals of Common Core and the students it strives to produce were almost identical to the characteristics of a self-regulated learner. The main goals of the Common Core initiative are to create college/career ready students who will have the necessary tools to thrive in society today. "…Students need the ability to

gather, comprehend, evaluate, synthesize, and report on information and ideas, to conduct original research in order to answer questions or solve problems…" (Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects, 2010). The students' abilities to master the standards are similar to the strategies (problem-solving, evaluation of tasks, and others) evident in SRL. Common Core also offers a portrait of students who are deemed successful in completing the standards. Common Core Standards teach students to be aware of their own thinking (metacognition) and recognize the power of their own thinking through reflective practices. These reflective practices mirror the goals of the performance phase in the SRL model. Research into both of these educational practices can provide rich, beneficial findings that can be implemented in our classrooms today and enhance the learning experience for students.

CHAPTER 2: METHODOLOGY

Goals of Study

The goal of this research is to explore the significance of SRL and its role in a classroom. Through related research, I have used the strategies SRL offers on students and analyzed the effectiveness of these strategies. I have found activities that exhibit the strategies SRL promotes and assessed the effectiveness of these activities through the Self-Regulation Empowerment Program or SREP. SREP is a training program, which is based on both Barry Zimmerman and Timothy Clearly cyclical model of Self-Regulation. This model uses a problem-solving approach in establishing SRL strategies in students. As self-regulating learning coach or SRC, I was able to define problem areas and clarify causes of behaviors through the implementation of the SREP framework. In my research, I specifically focused on the Zimmerman cyclical model of Self-Regulation. He identified three main aspects of the Self-regulated Learning model: self-observation, self-judgment, self-reactions. The overarching categories of these aspects include two essential components: diagnostic assessment and developing the self-regulated learner. Within these two categories or components, the three distinct phases of SRL are embedded. Analysis of the obtained data at the selected elementary school hopefully shed some light on whether SRL strategies were prevalent in the new Common Core Standards and Marzano trends. My data hoped to answer if, at all, SRL strategies fostered student learning.

Rationale for Target Population of Study

The peak of learning occurs when students are involved in the development of their cognition, when they are expanding their knowledge through concrete and abstract concepts and when their identities are strengthening. Many theorists believe that the peak of this learning is

established when the mind is young and fresh, when it hasn't been exposed to the predetermined ideas or vulnerabilities existing in its environment. Theorists believe that to reach this potential, the mind is consistently evolving and most importantly it is active. When students reach this point in their learning, they are using the experiences they encounter to develop their own sense of the world at different points and learning how to process the new schemata (Kamii & DeClark, 1985). Where do we see the most learning taking place? Jean Piaget's Constructivism Theory labeled young children as active seekers of knowledge. Many pre-school and primary programs are modeled on Piaget's theory (Smith, 2001).

Through my experiences, I have found that elementary children/students are like sponges in the sense that they soak up everything around them and filter it to their needs. In my perspective, I feel that elementary school teachers are at an advantage because changing student habits to impact student learning are easier to accomplish in an elementary classroom setting. As educators we should to spread our strategies across the time frame we have with our students. We should then use this time effectively to grant our students the opportunity to reach their peaks of learning and to illuminate their creative talents. For this reason, an elementary classroom setting is the target population I chose in my research. Implementation of SRL will take place in a 4th grade classroom at Hunter's Creek Elementary. Hunter's Creek Elementary is a K-5 school located in a quiet and diverse suburban area that favors a family oriented lifestyle. Similar to the community, the school is diverse in its student demographics. It is a melting pot of different cultures, races, and ethnicities.

Target Population

The students chosen in this study are Students J, A, and H. These are pseudonyms used to maintain their anonymity. The three students chosen in this study are labeled as high, middle, and low according to the classroom instruction teacher and school data. These students were specifically chosen according to their academic level to determine the impact of SRL across different academic profiles.

Instruments

My methodology was also enhanced with Zimmerman's SRL philosophy. **(**See Appendix C for further information on the Self-Regulation Empowerment Program). I will administer pre- and post-assessments for certain activities and differentiate instruction according to the SREP model to meet student needs. Below is a list of the activities with corresponding descriptions and table that I will use as reference to successfully implement SREP.

1. **Personal Interest Inventory**
    - Students will respond to 10 general questions about their interests and learning styles. This activity serves to simply get to know the students before conducting the research. It is a brief synopsis of their personalities and what their personal interests are.
2. **Key SRL Terms Flashcards (Pre-/Post)**
    - Students will be tested on their knowledge of the terms *reflection, goal, motivation, and strategy*. These are the key terms throughout the SRL model.
3. **14-2 Quick Check (Pre-/Post)**

- In this activity, the students are given a 5 problem quick check. This quick check tests the students on their knowledge of equivalent fractions. They will be given this quick check at the beginning and end of this research.

4. Re-teaching 14-2

- This worksheet will be used to re-teach the concept of equivalent fractions and decimals.

5. KWL Chart Strategy

- The KWL is a strategy used to teach reflective practices. It allows students to practice self-monitoring and to organize their thought processes. The students will first write what they know about the presented subject and what they want to learn. Later, after completing the task, they will write what they learned.

6. Graphic Organizer/Visuals: Equivalent Fractions (Index cards)

- This activity visually portrays equivalent fractions. This activity is hands-on. The students are given a set of 4 index cards. One index card will represent a whole. They will take a second index card and fold it in half to represent ½ of a whole. They will then line up the 3rd index card and create 6 pieces to represent 3/6. Here, the students will see how ½ is equivalent to 3/6 and how 3/6 simplifies to ½. In addition, they will use the last index card to show how 2/4 is equivalent to ½.

7. Self-regulation Graph

- This graphing procedure is used to teach students how to set goals and list the appropriate strategies to reach those goals. They will also self-record their

progress from beginning to until they reach their goal. The students will create their own graph and split their graph down the middle to show pre and post using SRL strategies. They will graph their initial math score and list the strategies they used to attain that score. After graphing their pre-SRL test score and strategies, they will set an attainable goal for their post assessment.

Table 1**.** *Sample of Self-Regulation Microanalytic Assessment Questions and Cyclical feedback loop.*

Phases of Cyclical Feedback Loop	**Self-Regulation Processes**	**Assessment Questions**
FORETHOUGHT	**Goal Setting**	-Do you have a goal when studying for your math tests? Explain. -Do you have goal you are trying to achieve on your math tests?
	Strategy Choice	-How did you decide to use this strategy when preparing for math tests?
	Intrinsic Interest/Motivation	-How interesting is studying/preparing for your math tests? -How much do you enjoy studying/preparing for your math tests?
PERFORMANCE	**Attention Focusing**	Do you have to try to motivate yourself when studying for math tests? What do you do when you don't feel like studying for your math tests?
	Self-Recording	-Do you keep track of where you study for your math tests? -Do you keep track of how long you study for your math tests?
SELF-REFLECTION		-How do you determine if you performed well on your math tests?

	Self-Evaluation	-How satisfied are you with your performance on your last math test? -What do you need to do to improve your performance on your next math test?

I have completed my Institutional Review Board (IRB) requirement before I conducted my research on human subjects. Anonymity will be implied and the names of these teachers and students will not be of any importance in my thesis.

CHAPTER 3: DISCUSSION

The Self-Regulation Empowerment Program strives to answer *how*, *where*, and *why* some students self-regulate in order to gain academic control through metacognition, behavioral, and motivational processes. The *how* correlates with the metacognitive aspects of the SRL model and attempts to highlight students' strategies in accordance with their learning outcomes. The *where* deals with students' choice of task and the social and physical environment that influences their performance in completing that task. The *why* evaluates the students' motives when choosing a task; therefore the question of why focuses on the motivational aspects of the SRL model. Zimmerman has simplified these essential academic questions into the following phrase: "To what extent does this student have knowledge of, select, and regulate the use of these specific study and self-regulation strategies to enhance his or her performance on these performance outcomes in that particular class?" (Clearly & Zimmerman, 2004). These essential questions are embedded within the two components of the Self-Regulation Empowerment Program (SREP): Diagnostic Assessment and Developing the Self-regulated Learner.

The SREP is in its entity a flexible approach to self-regulation. The self-regulating learning coach or SRC may or may not use all the procedures entailed in SREP. Time constraints and other limitations may affect the SRC's ability to fully assess the student on a microanalytic level.

Component One: Diagnostic Assessment Overview

The main goal of component 1 is to answer the academic questions above on a microanalytic level with a specific targeted assessment. The questions on the assessments will go from general information about the student and progress into more specific and microanalytic questions. The Diagnostic Assessment consists of the following general diagnostic questions used to first identify:

i. What classes does the student struggle in?
ii. What expectations or outcomes are having a negative impact on the student's performance level?
iii. What are the activities the student struggles in?
iv. What are the strategies the student knows and how does the student regulates these strategies?
v. What are the strengths and weaknesses of students?

Progressing from more general to specific, presented in Table 1 are the specific assessment questions provided within this microanalysis. Open-ended divergent questions are necessary within the microanalysis, while close-ended questions are also acceptable. These questions have been modified for my research study.

Table 2. *Sample of Self-Regulation Microanalytic Assessment Questions and Cyclical feedback loop.*

Phases of Cyclical Feedback Loop	Self-Regulation Processes	Assessment Questions
FORETHOUGHT	**Goal Setting**	-Do you have a goal when studying for your math tests? Explain. -Do you have goal you are trying to achieve on your math tests?
	Strategy Choice	-How did you decide to use this strategy when preparing for math tests?
	Intrinsic Interest/Motivation	-How interesting is studying/preparing for your math tests? -How much do you enjoy studying/preparing for your math tests?
PERFORMANCE	**Attention Focusing**	Do you have to try to motivate yourself when studying for math tests? What do you do when you don't feel like studying for your math tests?
	Self-Recording	-Do you keep track of where you study for your math tests? -Do you keep track of how long you study for your math tests?
SELF-REFLECTION	**Self-Evaluation**	-How do you determine if you performed well on your math tests? -How satisfied are you with your performance on your last math test? -What do you need to do to improve your performance on your next math test?

The assessments conducted in Component One should begin to highlight the students' responsibility in their own learning process. Information on the students' knowledge of setting goals, using different strategies to accomplish tasks, how they reflect upon the use of these strategies, and how they make adjustments to their learning should be the data collected after the interview has been given. The focus of this specific and targeted assessment is to measure the student's intrinsic motivation before, during, and after outcome expectancy, self-goals and self-efficacy beliefs and finally strategy use and metacognitive processes. Other microanaytical tools of measurement include structured diaries, which focus on the students' intrinsic/extrinsic motivation, self-efficacy beliefs when choosing a task, and task value. These event measures, during the diagnostic assessment, can help link and find commonalities between the variables during the successive SRL phases. Following Zimmerman's SREP model the activities within my research, that fulfilled the diagnostic assessment of the students, attempted to answer the why, how, and where before the development of a self-regulatory learner.

Information gathered from the Assessment Specificity Guide created by Zimmerman and Clearly, provided that all three students, referred to as Student J, Student A, and Student H, struggled in the subject of math. Specifically, the students struggled in the topic of relating equivalent fractions and decimals. The students were required to take a state benchmark test, which tested them on their mastery of 4^{th} grade math benchmarks. According to the results of this benchmark test, the students performed poorly in the area of equivalent fractions and decimals. According to class averages and school data, Student J is a high level/above grade level student (91%), Student A is a mid-level/at grade level student (80%), and Student H is a low-level/below grade level student (70%). Through informal observations, the teacher

mentioned that these students lack attention and focus, motivation, and time management strategies. These limitations are having a direct impact on their grades.

After identifying this data, I conducted a general personal interest inventory. The following questions were given to the students:

1. *One interesting fact about yourself.*
2. *What is your favorite subject in school? Why?*
3. *Least favorite subject in school? Why?*
4. *Favorite reading book? Why?*
5. *Do you consider yourself ready for 5th grade? Why? What do you do that makes you successful?*
6. *Do you consider yourself a good learner? (everything taught you understand, go home and study, etc)*
7. *What makes a good learner? Is it the teacher, the parents, studying, the school, the homework, etc?*
8. *When you come across a math problem in the classroom, what does your teacher do to help you understand the problem? (asks questions, shows pictures, etc.)*
9. *When you come across a math problem at home and no one is there to help, what do you do? Do you use any specific strategies?*
10. *What do you do to prepare for a math test?*

The personal interest inventory served as an additional event measure, specifically a structured diary, to help identify the students' knowledge of study strategies, topic interest,

problem-solving methods, and brief synopsis of their personal interests. The following table displays the students' responses in the Personal Interest Inventory.

Table 3. *Student Responses for Personal Interest Inventory*

Question Number	Student J	Student A	Student H
Q1	I think cars are interesting.	I do gymnastics in level 5.	People think I can sing very good and me too
Q2	Science, you get to do experiments.	Science because you do experiments.	Reading because you can read about interesting things
Q3	Math, it's hard.	Math because it bores me.	Math because it is boring
Q4	Percy Jackson: The Greek Gods	I like Dork Diary because it talks about girl problems.	My favorite books are Dork Diary. I love it because it shows every emotion
Q5	We practice a lot	I try to get the best grades	I study a lot to make me smart
Q6	Study	To pay attention and be focused, try as hard as you can	What makes a great learner is focus, follow rules, passion, and try best.
Q7	Paying attention, following directions	Teacher helps me become a better learner	The teacher is the one who helps kids become smart.
Q8	Teacher is success	Mrs. J helps me become a better learner	Strategies, read over
Q9	Act out	I think of all the strategies I know of	When I don't know I will ask the teacher
Q10	Ask teacher	study	I will scan through what I know

The combined results of the personal interest inventory and the Assessment Specificity Guide indicated that the three students exhibited limited knowledge of effective strategies. For example, the three students were familiar with a few study strategies such as checking their work and scanning what they already know. None of the students mentioned appropriate problem-

solving strategies or time management strategies following the required criteria of a successful self-regulated learner. The students also all listed asking the teacher for help as a strategy. According to the students, the teacher has a planned portion of the day called Independent Learning Time designed to provide re-teaching of specific skills for students. All three of the students were in agreement on how this time was efficient and effective for their mastering of the concept. They enjoyed that the teacher was fully attentive and immediate feedback was given. This input indicated that the students are struggling in assessments in math, not whole class or small group instruction and activities. The Personal Interest Inventory indicated that these students disliked the subject of math out of all subjects. The fact that it is not as hands-on and engaging as science lowers their motivation to learn more about it. Reponses also indicated the students enjoyed reading as well. They loved to read various books such as adventure and comedy. Because their interest levels in reading are high, this could be a vital indicator when determining their motivation for reading.

Analysis of Diagnostic Assessments

The Assessment Specificity Guide and the Personal Interest Inventory aimed to determine the students' motivational profiles and intrinsic interests at the beginning of this research process. According to Zimmerman's philosophy, intrinsic interest and motivation should be developed in the Forethought phase of SRL. These two essential factors determine students' abilities to strategically set a goal and plan to complete the goal for a particular task. If the students are not interested in the task, causing a low task value, they are less likely to use self-regulatory processes to complete the task (Zimmerman, 2011). According to the data collected in the instruments above and associated student behaviors, it is evident that these students are assigning low task values for the subject of math and high task values for other subjects. As students continued to discuss why math was their least favorite compared to their favorite subject(s), student attitudes were widely distinguishable.

Student J

Giving only short responses and sometimes even one-worded responses, Student J seemed the least motivated to relearn the topic of equivalent fractions or to even participate in this research study. This may be due to the fact that math is his least liked subject and he thinks it's "extremely hard." As he answered the questions, Student J was distracted with his eraser and showed no interest in putting in effort. In contrast, when we talked about reading his attitude changed and intrinsic interest was observable.

Student A

Student A was the most motivated during this activity compared to the rest of the group due to her personal responses and reflections. She gave numerous examples of why math was her least

liked subject and also, provided her opinion on how it could be more engaging. She thought about her answers before stating them and made sure she was detailed in her answers. From her responses, it was evident she was confident in her learning and ready to take control over her learning processes. She noted that although she did not like math, she had to work hard for the scores she wanted. Student A seemed to attempt self-regulatory processes, but inaccurately analyzed tasks demands.

Student H

Student H mentioned that because it is boring, she often zones out during whole group instruction. Her behavior during this activity mirrored her attitude and interest levels. She was often distracted and did not give me her full attention unless and until I gave her my full attention. Student H responded only when encouraged to respond and did not take up any opportunity to self-regulate (Perry & Rahim, 2011). She often distracted the other students by flicking her eraser or by cracking jokes. The root of the problem here was her behavior that hindered her motivation and attention span for the task.

The students indicated how the Independent Learning Time was critical in their re-learning the concept. Although the SRL model fully supports the practice of scaffolding, this evidence suggested that the students exhibited teacher dependence. The students depended on this one on one time to re-learn the concept rather than taking the initiative and attempting to take on the challenge of the re-learning the concept themselves. Here the students are not exercising autonomy or independence, one of the key characteristics of a self-regulated learner. This was revealed when the students frequently asked me to repeat questions and directions. They also waited for me to guide them and did not write down their answers until I gave them

my full individual attention. In the SRL model, scaffolding is necessary with the emphasis on creating and empowering student autonomy. When student autonomy is established, students are able to move into the performance phase of SRL. The students will then be able to self-control their attention focus and maximize their learning.

Student J

Due to his lack of interest and motivation, Student J had to be reminded a few times of the directions for the task.

Student A

Student A was dependent on my guidance and my attention. Repetition of the questions and directions was consistent for her. She was not exhibiting decision making skills nor was she confident about her learning. For example, she waited for my approval before she moved on to the next task.

Student H

Due to her lack of focus and attention, Student H had to be reminded frequently to write down her answers. Repetition of questions was frequent.

Last but not least, students exhibited limited knowledge in strategies and strategic planning. Some of the strategies students stated questioned if they even knew what a strategy was. They relied on beneficial resources such as scanning for prior knowledge and using online resources, but they are not able to determine if these resources are effective when completing a task. "…strategic planning involves selecting or creating a strategy to optimize one's performance during learning attempts." (Clearly & Zimmerman, 2004).

Student J

Although Student J listed using a visual as a strategy, he also put down asking the teacher as a strategy as well. When further questioned how a teacher could be used as a strategy, he stated, "…because she helps me find the answer…" The student does not understand how a teacher could be used as a strategy to maximize his learning.

Student A and Student H

Student A and Student H relied heavily on rehearsal strategies such as, rereading the problem until it is understood and memorizing class notes in preparation for a test. They are not effectively choosing strategies that optimize their learning. When ineffective strategies are being used, students tend to lose focus in the overall learning task therefore decreasing motivation levels.

Before moving into the specific mircoanalytic questions, assessing the students' prior knowledge on key SRL terms was necessary. The Key SRL Terms activity included the terms widely used within the SREP model such as, reflection, goal, motivation, and strategy. This activity tested the students' prior knowledge in regards to these specific terms. As the SRC, I asked the students to think aloud as they wrote the definitions of these terms. Thinking aloud or self-talk is an effective SRL behavior or skill.

Analysis of Key SRL Terms Activity

The data attained from this activity provided compelling evidence that these students have limited knowledge of these terms, even after providing them with specific sentences using the terms. For example all three students wrote the homophone of the term goal, defining it as the goal used in a soccer game. For reflection, the students defined it as what you see in the

mirror. The students understood what motivation was, but had difficulty defining it or explaining it. Table 4 summarizes student initial/pre-SRL responses.

Table 4. *Key SRL Terms Activity: Initial Responses*

	Reflection	**Goal**	**Motivation**	**Strategy**
Student J	'see a look-alike'	'in a soccer game to get points, to achieve'	'to cheer up'	'to think'
Student A	'it means to see yourself on the other side'	'to try to get what you need'	'to get pumped'	'a skill that you use'
Student H	'a reflection is when you are in the mirror'	'a goal is like to earn points'	'to interest someone into a conversation'	'a strategy is to learn something'

During this activity, teacher dependence was exercised while little student autonomy was evident. Repetition of the directions and sentences describing the words in context was consistent. I had to reassure the students that my expectations were solely for the purpose of conducting this research study and in no way will affect their classroom grade. Strategic planning was also not evident. Students needed assistance in what to write exactly. Probing questions were necessary.

Student J

Student J's motivation had not increased for this activity; therefore his task value was also low. He flew through these questions and seemed rushed. I had to remind him to take his time and be specific with his answers as much as he possibly could. He did not show much difficulty when thinking of his definitions, which resulted in him defining them incorrectly as illustrated in Table 4. From observations, Student J exhibited overconfidence in his ability to define these terms correctly (Winne & Hadwin, 1998). This is a common trait of students who do not use

metacognition effectively and solely rely on their prior knowledge. In all phases of the SRL model, metacognition is practiced and exercised.

Student A

Student A needed the most reassurance and scaffolding. Student A possessed self-efficacy beliefs in that she was motivated. Her effort in performing well was evident from her behavior in this task; however she did not strongly believe that she could perform at a specific level of performance or expectation. She was worried more about writing the exact answer and meeting my expectations before moving on to the next term. As I provided her with my reassurance, she was at ease.

Student H

Student H exhibited positive behavior in this activity. There were little interruptions or behavioral problems. She was motivated to define the terms and needed little attention and scaffolding from me. As she defined the term strategy, she sparked up and quickly wrote down her definition. As shown above, her definition was correct for the term strategy. As Zimmerman stated about task value and motivation, Student H looked at this task positively therefore resulting in an increase in her assigned task value and motivation to complete this task. The fact that she was confident about her knowledge of the term resulted in positive self-efficacy beliefs.

After gathering the students' diagnostic information essential for answering the SRL questions, moving into microanalytic procedures was appropriate. Discussions using specific open-ended questions about goals, reflections, and strategies throughout the study, intended to measure the students' motivation before, during, and after outcome expectancy and self-reflection. These discussions attempted to answer the microanalytic questions in Table 1. As the

discussions progressed and questions were answered, a few strategies were modeled and implemented.

Discussion One consisted of goals and setting attainable goals. It is essential to help students construct small, specific, and short-term goals rather than long-term general goals. The goal is help students achieve their goals in the end, not overwhelm them with unattainable expectations. After thoroughly explaining the definition of a goal and providing numerous examples, the students were given an opportunity to talk about goals they would like to set for the summer. Mentioning the difference between setting a goal and setting an attainable goal was highly significant.

Analysis of Discussion One

Student J

Student J was attentive and motivated. He was excited to share that his goal for the summer was to read a specific novel series. As he set a goal, we worked together to make it more specific and attainable. Student J understood the importance of setting a goal and working to accomplish it. His task value for this particular assignment was high due to that fact that his topic interest was high. The effect of such high levels impacted his motivation towards the task. From the Personal Interest Inventory, Student J did mention that reading was his favorite subject, which caused him to be more passionate in achieving his goal. His self-efficacy beliefs in reading in particular, played a significant role in the effort he put toward setting a goal and how active he was in the discussion. In relevance to SRL, this particular interest is called situational interest (Hidi & Ainley, 2008). In situational interest, the student only engages in activities related to his/her strong interests and targets likes rather than dislikes. Due to his strong interest in the genre of this

novel series, Student J is willing to seek continuous engagement in this specific discussion with or without scaffolding.

Student A

Student A was familiar with goal setting due to outside influences. Here, the students were beginning to engage in self-reflective thoughts. Student J and A understood that without goals nothing would be accomplished.

Student H

Student H was motivated during this discussion, but lacked attention and focus. She did cooperate and express her feelings towards her favorite series of books.

Discussion Two consisted of listing strategies the students were familiar with. After listing the strategies, I defined the term strategy as a plan or skill that helps you successfully accomplish your goal. Numerous examples of specific strategies were given to emphasize the difference between those specific strategies and the broad strategies the students had given. For example, "trying your best" is a broad strategy that does not help at all with pursuing a goal. In this discussion, the *how* of SRL is emphasized by making the correlation between strategies and learner outcomes clear for the students. This discussion was aimed to convey faulty strategies used among students and also to highlight the importance of choosing a more effective strategy to use. While discussing strategy use, I was also introducing metacognitive monitoring to the students by continuously telling the students to question their thoughts. This will prepare students for the Performance Phase of SRL.

Analysis of Discussion Two

An analysis of Discussion Two suggested that the students' perception of strategies is to use all the strategies they know at once, which will eventually lead them to their answers. These students also tend to use strategies that do not assist them in problem-solving, but continue to use them claiming that is what they were instructed to do. As SRC (self-regulated learning coach), emphasis on giving the students authority to use the strategies that work for them was highly needed. To emphasize self-reflection and strategy use, I told the students to ask themselves what worked and what didn't work and then use what worked for you. This will eventually lead to less time wasted on strategies that do not work for that particular student.

Discussion Three consisted of defining and explaining the term reflections, specifically self-reflections and self-evaluations. As self-regulated learners, the students need to understand the impact of determining which strategy to use and how that particular strategy benefits their learning. Self-reflecting and self-evaluating helps increase student awareness on using effective strategies. I emphasized that self-reflection allows students to visually see their progress and make the changes necessary. This targeted Student J because one of his strengths was using visualization as an effective strategy for difficult tasks. The goal of this discussion was to eventually prepare students for the final phase of SRL: Self-Reflection. Self-reflection allows us to organize our thoughts and ideas. This targeted Student A, due to the fact that she mentioned she loves organization and would like to work on organizing her ideas. As students commented during this discussion and added in their prior knowledge about reflecting, the point was made that they were in the process of self-reflecting as they spoke.

Component Two: Developing the Self-Regulated Learner

Component Two intends to mold the weaknesses of the students, found in the data collected from the methodological assessments into strengths. According to Zimmerman and Clearly this is accomplished in three steps. Key tenants in each step are listed below:

i. Student empowerment
    1. The student gains control over their learning.
    2. Students become aware that their success is in their control.
    3. Students will be taught how to self-record information in order to spot out errors and how to strategically correct their errors.
    4. Graphing helps students organize their performance in school and highlight ineffective strategies
    5. After recognizing their errors, students should be able to see the link between strategy use and school performance.

ii. Expand the student's knowledge of learning strategies
    6. Students will be introduced to new study strategies
    7. Help students use strategies in a more independent manner.
    8. Strategies will first be modeled to the students and later, the students will have an opportunity to practice the strategy.

iii. Guide the students into self-reflective processes (cyclical feedback loop)
    9. Students will be taught how to create a graph and set attainable goals. They will graph their performance in school (grades) and list

the strategies that will improve their grades. Students will later return after using effective strategies and compare the results.

10. Students will reflect upon ineffective and effective strategies.

Forethought, performance, and self-reflection strategies are emphasized within the activities in each step.

From the beginning of this research process, the students needed to understand that academic success was under their control. This idea was emphasized throughout the discussions in Component One and Component Two. Empowerment involves being able to identify, control, and monitor their specific strengths and weaknesses, which will increase their motivation and self-efficacy beliefs in all subjects rather than their most liked subjects. The primary importance here is before developing the skill, it is essential to develop the will first. To help students identify and visually become aware of their strategic errors, the students were asked to complete a pre-assessment. This pre-assessment, Quick Check 14.2, consisted of problems based on the benchmark of equivalent fractions and decimals. Before students took this pre-assessment, they were reminded to self-reflect and use metacognitive monitoring by asking themselves, *"What works for me?"* As they finished the pre-assessment, I had the students write the strategies they used on post-it notes.

Analysis of Pre-Assessment: Quick Check 14.2

As a group, we engaged in the process of self-reflecting and discussed how effective the strategies used were. The students' responses were quite surprising due to the fact that this specific exercise should not be new for the students. In class, the students have previously learned this particular topic and were assessed with appropriate assessments to satisfy the fourth

grade benchmark of relating equivalent fractions and decimals. When asked if the strategies were effective or not, the students were not as responsive as in previous discussions. This behavior is an indicator that the students are not aware of the link between strategy use and success on an assessment or task.

Student J

Student J said that drawing visuals was a strategy he used, but he did not sound confident that it was effective. He specifically stated that this pre-assessment was difficult and that he guessed on most of the problems. This is the result of entity assumption, in terms of self-regulation. An entity assumption is the belief that one's intelligence is fixed, resulting in the idea that one is born with intelligence. This assumption will discourage learners, who are not confident in their learning, to take risks and challenge themselves. Student J's behavior and lack of motivation during this pre-assessment fall under the entity assumption in that not knowing how to solve the problems led to him feeling helpless.

Student A

Student A used the strategy of underlining key words. She took the longest to complete this pre-assessment, illustrating her high levels of teacher dependence. She also demonstrated little metacognition when stating that she did not know what the question was asking her, which resulted in her guessing on majority of the problems. Although Student A exhibited ineffective strategy use and metacognition, she did show evidence of self-evaluation. She was using prior knowledge as she used other methods her teacher had taught her to solve the problem. After underlining key terms and realizing that was not helpful, she went ahead and used visuals instead.

Student H

Student H used the strategy of scanning what she knew. She also said that she tried her hardest on these problems, yet guessed on the majority of the questions. Unlike Student J, Student H does not exhibit characteristics of one who has an entity assumption. She is attentive to her learning processes, but may lack interest in particular topics. She is exhibiting situational interest, in regards to SRL. Converting her situational interests into individual interests is essential to support her self-regulated efforts to learn. Development of her individual or personal interests includes encouraging her to proactively engage in least liked tasks in order to develop a high level of skill. Developing a high-level of skill should work as an incentive to motivate her to accomplish this least liked task. As she masters this high-level skill she will then personally identify with the task, which in return will change her perception about the task.

Table 5. *Student Scores on Pre-Assessment (Quick Check 14.2)*

Student J	3/5(60%)
Student A	3/5(60%)
Student H	3/5(60%)

As indicated in the above table, the students received below average (60%) on the pre-assessment containing only five questions. The students were given an opportunity to look at their work and evaluate the results. Providing positive support, the students were reminded that these grades can be turned around with effective strategy use, planning, and goal setting. I told the students they would be taking the same assessment again, but after learning new strategies and organizing their improvement in the Self-Regulation Graph.

To emphasize the goals of the Performance and Self-Reflection Phases of SRL, the Self-Regulation Graph method attempts to illustrate student grades on similar assessments and the corresponding strategies used to achieve those grades. The graph combines all self-regulatory processes such as goal attainment, strategic planning, self-evaluation, self-recording, and self-reflection. At the end, the students should be able to see the link between study strategies and their grades.

I introduced the graph and explained the parts of the graph to the students. The students were then each given a sheet of graph paper and asked to create the same graph with the proper parts labeled. After the graph was completed, it was now time to fill in the necessary information. The students plotted their pre-assessments scores, as well as their scores from the Benchmark test. The students were also asked to plot down the strategies used for both assessments. While looking at their scores on the pre-assessment, the students were asked to set an attainable goal for their post-assessment. "What score would you like to achieve on your post-assessment?" All three students agreed to earn an 80% (4/5) on their post assessment. The students were asked to look at their strategies and their previous test scores. I made sure to point out that these strategies might not be working in helping them achieve higher grades. The students need to understand that there is always need for improvement and self-efficacy beliefs are not fixed.

Analysis of Self-Regulation Graph

The students had much difficulty in creating the graph. I had to repeat directions and take them step by step. These modifications hindered student independence and bolstered teacher dependence.

Student J

Student J did not have much difficulty. He demonstrated persistence and attentive listening. In contrast to his behavioral pattern in previous stages of this research, Student J was displaying autonomy by wanting to figure out how to draw the graph on his own when only looking at the example once or twice. He only needed my assistance once and then continued to problem-solve how to draw the x-axis. He patiently waited as the other students were caught up.

Student A

Student A was as persistent as Student J, but was dependent on my assistance. She frequently waited for my approval as she finished each step. Student A was spending too much time worrying about organization such as, the number of lines she should skip in between each test score. Self-reflection practices will help her with organizing her thoughts and processes and decrease frustration.

Student H

Student H also exhibited teacher dependence and little problem-solving strategies. Instead of challenging herself through her frustration, she took the example and placed it in front of her to copy. She copied it exactly.

As students begin to see the link between strategy use and task performance, teaching and modeling effective strategies begins the next step in Component Two. During this step, extensive modeling and scaffolding is highly necessary. Following the cognitive apprenticeship model created by Collins, Brown, and Holum (1991) and adapting it to the SRL model, there are six methods teachers should follow in order to develop student expertise in self-regulatory processes. Zimmerman has also used these instructional models and interventions in developing

self-regulatory learners. Modeling, coaching, scaffolding, articulation, reflection, and exploration, will all be fluently exercised in Component Two.

To successfully begin this step, I began re-teaching the concept of equivalent fractions using visuals. I had the students complete a hands-on activity where they were able to create equivalent fractions using flashcards. This activity was especially chosen for these particular students due to the fact that it was hands-on and engaging. This kept their attention and motivation at high levels. This strategy was modeled by teaching the students how to think using the strategy to perform the task rather than teaching the students what to do. When modeling, I was also verbalizing my thinking process. As students saw how I modeled this strategy and practiced it in context with examples, the students were given time to practice the strategy with specific feedback prompting. Prompting and appropriate feedback should facilitate the students' internalization of SRL strategies. These practices fall under the realm of coaching and scaffolding. Coaching consists of providing students with feedback and offering hints and reminders in order to consistently provide motivation and improve self-efficacy beliefs. Scaffolding ensures that the students are carrying out the strategies effectively and appropriately. As students practiced, I encouraged students to engage in self-talk or think-aloud measures. Self-talk creates opportunities for students to self-regulate and exercise their metacognition. As self-regulated learners, students must be able to overtly observe their metacognition, rather than covertly. It allows students to hear how they sound in diverse contexts. After practice with this strategy in context was completed, we discussed and self-reflected on *how* we used the following strategy and *why*. This involves articulation, giving the students an opportunity to discuss and verbalize their choice and use of the specific strategy employed.

Student J

This strategy supported Student J's strength of using visuals. Using this strategy was conducive to his learning and most importantly to his attention and focus control.

Student H

Student H specifically explained how she liked that she saw how the fractions were broken up on the index cards. Student H's behavior was very energetic and motivated due to the fact that she was able to create something in the subject of math. This changed her perception of math being a boring subject. In this activity, the goal was to convert her situational interests into individual interests (Clearly & Zimmerman, 2004). Further analysis of her increase in motivation indicates that Student H is beginning to develop individual interests for the subject of math.

Another strategy modeled was the KWL chart (What you know, What you want to know, and What you learned). The KWL chart is an effective strategy which uses the funneling technique to arrive at the core of the confusion that arises when problem solving. Graphic organizers such as this one, help learners organize their thoughts. As I worked through a problem, I verbalized my thoughts as I filled in each section in the graphic organizer. Before allowing the students to practice on their own, we worked together to solve problems while practicing self-monitoring strategies to check our understanding. Guided practice is essential in teaching the students self-regulatory processes. During guided practices, student autonomy is encouraged as the responsibility of learning shifts from the teacher to the students. Again, the students were asked to solve a problem using the KWL chart with feedback and appropriate prompting. After, self-reflection is necessary. The students were familiar with this strategy and mentioned that their teacher uses it all the time.

Other strategies implemented included self-talk and self-reflective questions during the completion of a problem such as, “Did I read the problem carefully? Did I answer what the question is asking? Do I understand what I need to do? Do I know the skills necessary to complete this problem?”

Student A

Student A was the only student during this activity to verbalize her thoughts as she completed the problems and filled in the KWL chart. This mirrors her consistent need to maintain organization either in her learning or physically in her work. Her self-talk indicates that she is problem solving and self-evaluating by asking herself *how?*

As the new strategies were implemented, modeled, practiced, and scaffolded, the students were ready to take their post-assessment and determine if they had reached their goals. This final step should prove that the students have undergone the cyclical phases of the SRL model in a self-regulated manner. All strategies used, SRL graph, equivalent fraction cards, and KWL chart, were laid out in front of the students. The students were instructed and encouraged to use whatever strategy they felt helped them the most during re-teaching. In this step, the students were given an opportunity to practice the strategies independently and the results should be able to assess how effectively these students used these strategies without help.

Analysis of Behavior during Post-Assessment: Quick Check 14.2

Even though the students have seen this assessment before, some of their behavior during the assessment were surprising.

Student J

Student J seemed frustrated and attempted to use the flash cards for assistance. He drew visuals to remind himself, but this strategy did not seem to help him. He did not use the KWL chart. During this post-assessment, Student J's motivation was very low. He did not try to solve the problems using the new strategies. He was consistently reminded to focus because at times he was caught staring off into space. This behavior can lead back to the entity assumption. Student J may still believe that his ability to perform well on this post-assessment is fixed rather than malleable.

Student A

Student A was exhibiting self-talk and asking herself self-reflective questions. She was reminding herself of what she needed to do to solve the problem. At times, she imitated the same speech used when this strategy was modeled during guided practice. Student A exhibited autonomy as she continued to use internal speech to problem solve, rather than depend on the teacher for assistance.

Student H

Student H also exhibited self-talk, but organized her thoughts using the KWL chart. She was the first of the students to refer to the KWL chart. After the post-assessment, Student H claimed that she had not guessed when answering the problems. The KWL chart helped remind her of what she needed to do. Monitoring her thoughts and recording these thoughts motivated Student H to solve the problem. She exhibited autonomy by problem-solving on her own, without raising her hand for help.

As the students finished, they graded their work and plotted their scores on their graphs. Along with their scores, they also wrote the strategies they used for this post-assessment. The table below shows the results of the post-assessment. Student A and Student H both achieved their goal of 80%, while Student J did not achieve his goal.

Table 6. *Student Scores on Post-Assessment (Quick Check 14.2)*

Student J	3/5 (60%)
Student A	4/5 (80%)
Student H	4/5 (80%)

The final step when analyzing and reflecting upon the information plotted on the graph is to make the students aware of the forethought, performance, and self-reflection processes. The students are reminded of how setting goals and developing a strategic plan led to using effective strategies to accomplish these goals. Reflecting and evaluating the effect of each strategy after each implementation helped them choose which strategies were most effective and beneficial. Further implementation of the cognitive apprenticeship model resulted in student reflection and exploration. These essential reflective discussions are incentives for regulating learning.

The graph hopes to teach students to become more independently challenged and willing to problem solve on their own. Looking at their increased post-assessment scores and the correlation between their scores and their newly acquired strategies, made a profound effect on Student A's and Student H's self-efficacy beliefs. The graph proved to the students that ineffective strategies were the result of their poor grades rather than uncontrollable factors such as their ability. Component Two concludes by reinforcing the premise that academic success is

in the hands of the learner who is able to control this success through the use of effective strategies and reflective processes.

Analysis of Post-Assessment: Quick Check 14.2

Student J

Student J was least motivated during the post-assessment. A further explanation for his decreased level of motivation could be based on his fixed mindset of failing the post assessment since he failed the initial assessment. With or without the use of these new strategies, Student J believed that he would still fail. This belief impacted his effort and caused him to not progress as the other students progressed. He felt that it was harder than before only because he forgot the steps to solve the problems. Here, Student J was attributing his failure to the difficulty of the task. This lowered his confidence and self-efficacy beliefs as a learner. Because this post-assessment was identical to the pre-assessment, Student J had already perceived this task as difficult. He already knew the possible effect this assessment may have on his self-beliefs and overall self-image. With this preconceived notion, he may have identified the task as a threat to his self-beliefs and rejected it; removing himself from this potential high-risk situation. This correlates to his lack of attention and focus and decrease in motivation. This also correlates to his need to create an "excuse" for his inability to accomplish his goal.

Student A

Student A realized the importance of using the KWL chart as a strategy. She was able to see the link between effective strategy use and grades. As she was encouraged to continue to use internal speech and self-talk, she was motivated by this feedback causing her self-efficacy beliefs to increase. This encouragement and feedback also reinforced her autonomy as she continued to use

the strategy effectively on her own. Student A said that the post-assessment was easier now with the new strategies than it was before. Compared to previous behavior, Student A also exhibited little to no teacher dependence as she took the post-assessment. Her motivation increased as she accomplished her goal.

Student H

Student H mentioned that the KWL chart helped her organize her thoughts and plan for how she wanted to solve the problem. It helped activate prior knowledge, which reminded her of what she needed to do to solve the problem. Student H exhibited an increase in motivation, which led to an increase in interest for the subject of math. Because of her accomplished goal, she was motivated to continue her efforts to learn and succeed. In contrast to Student J, here Student H became more motivated as she engaged in tasks that might have threatened her self-beliefs. Because she attributed her success to controllable methods such as, using effective strategies, helped her to achieve her goal. This caused her to be more motivated and continue towards success. From this post-assessment, Student H also demonstrated an incremental assumption as she accomplished her goal. An incremental assumption is based on an underlying theory that intelligence is malleable and controllable. This assumption motivated Student H to challenge herself and gain confidence when improving her abilities.

Analysis of Pre/Post Assessments

Analysis of the data obtained in the two components of SRL was extremely necessary to determine the impact of the SREP model on the three students. Further, pre and post assessments will specifically aim to determine if, at all, SRL strategies have improved student learning.

The findings collected from the pre and post assessments correspond with the students' attainment of the importance of goal setting, strategic planning, motivation and self-efficacy beliefs, metacognition and self-talk practices, and self-reflection and self-evaluation.

Before implementation of SRL strategies, students were first tested on what they know in regards to strategies, metacognition, and self-reflective practices. These measures to assess the students' prior knowledge yielded their inability to self-regulate effectively. Furthermore, these findings provided compelling evidence that these students were teacher dependent, demonstrated ineffective strategy use and self-reflection, and exhibited limited autonomy.

To cultivate SRL, self-regulatory practices and strategies were imbedded within the re-teaching and activities. Modeling, coaching, scaffolding, articulation, and reflection and exploration were all used to teach students how, where, and why we self-regulate.

Table 7 summarizes the factors that pertain to each phase of SRL, while comparing pre and post assessments. The table strives to show the increase of measurable self-regulation practices between pre and post.

1. *Number of Modifications* corresponds with students' ability to demonstrate autonomy and independent problem-solving.
2. *Teacher Dependence* specifically includes the students' consistent dependence on teacher approval and feedback before proceeding to problem-solve on their own.
3. *Reflective practices* include the number of times the students engaged in reflection. It also includes self-evaluation and exploration before and after SRL.

Table 7. *Comparisons between Pre- and Post-Assessments*

	Number of Modifications	Teacher Dependence	Reflective Practices	Strategies stated by students and implemented
Pre	6	J 3 A 5 H 4	J 3 A 4 H 2	J 1 A 2 H 1
Post	1	J 1 A 0 H 0	J 1 A 7 H 6	J 3 A 4 H 4

The data within this table indicates that the students demonstrated a decrease in teacher dependence and task modifications. This comparison corresponds with the students' shift from teacher dependent to independent attitudes. As students demonstrated more autonomous behavior, it was evident that they were ready to self-control their attention and focus and maximize their learning.

Students also demonstrated an increase in self-reflection and self-evaluation. When evaluating their post-assessment scores, the students verbalized the importance of effective strategy use when accomplishing their desired goals.

In the pre-assessment, the students demonstrated limited knowledge of strategies and rarely used these strategies when performing the task (14.2 Quick Check-Pre). Before the post-assessment, the students were exposed to SRL strategies as well as other strategies their teacher has provided to ensure that the students were making connections. The strategies were modeled effectively as students learned what to do and how they can think using the newly acquired

strategy. Referring to the Table 7, the students showed an increase in effective strategy use. The students were given an opportunity to reflect upon the different strategies they used in comparison to their pre-assessment. They reflected upon how this affected their learning and how this differed from the pre-assessment. These vital discussions increased the students' awareness of the link between effective strategy use and good grades.

CHAPTER 4: CONCLUSION

Summary of Findings

Throughout my research of SRL, I was presented with multiple models, strategies, and explanations that attempted to prove the empowerment of self-regulation practices in the classroom. In self-regulated learning, students are immersed within their own metacognitive, behavioral, affective, and motivational domains. The students are independently goal-setting, positively adjusting their self-efficacy beliefs, expanding their expertise of effective strategies, and self-reflecting for future academic success. As students begin to self-regulate, an increase in student autonomy is evident and a positive, collaborative learning environment is established.

The goals of my study aimed to examine the significance of SRL among students in an elementary classroom setting. With my research, I hoped to prove the positive effects of self-regulated learning and strategies associated with SRL among students at various learning levels. I chose three students (Student J, Student A, and Student H) labeled as high, middle, and low in regards to their academic levels. These students were specifically chosen in order to determine the impact of SRL across different academic profiles. Other goals of my study aimed to determine the impact of SRL in classrooms and commonalities among current trends and curricula such as, the Marzano initiative and Common Core.

By providing the students with assessments and strategies based on Self-Regulation Empowerment Program (SREP) by Zimmerman and Clearly, I was able to collect a substantial amount of data that proved that these students had limited knowledge in effective strategy use and reflective practices, were not intrinsically motivated, and consistently depended on the teacher's assistance. The model consisted of two components that assessed the students on *how*,

when, and *where* they self-regulate and identified the students' weaknesses and changed them to strengths. While implementing this model, I made sure to adjust it according to student developmental needs and learning. After thorough coding and analysis of my data that included pre and post assessments, it was evident that SRL strategies fostered student learning. Below is a summary of SRL practices and their impact on each student studied. Within these summaries, the differences among student behavior and self-regulatory practices in each phase of SRL and component of SREP should be distinct enough to show the impact of SRL from the beginning to the end of this research.

Student J

At the beginning of this research process, Student J was the least motivated of the three students to perform the activities in Component One. It was evident that he was motivated in other subjects such as reading, but specifically not in math. He was more interested in setting a goal for a reading task rather than a goal for a math task. For reading, Student J was setting learning-orientated goals because of his motivation and situational interest. For math, Student J was setting performance-orientated goals, where he was only interested to look smart or competent in front of others or for himself. For this reason, his self-efficacy beliefs for reading were much higher than his self-efficacy beliefs for math. Student J also exhibited overconfidence in his abilities that resulted in misuse of metacognition as he solely relied on his prior knowledge. For example in the Key SRL terms activity, he rushed through the definitions, resulting in defining the terms incorrectly.

Analysis of Student J's behavior in Component One, with associated pre-assessments, discussions, and activities, concluded that he was not strategically planning and assigned low

task values for specific tasks. For example after taking the Quick Check 14.2 Pre-Assessment, Student J exhibited self-handicapping behaviors as he provided excuses for why he did not perform well and why this task was difficult. Student J believed his intelligence was fixed (entity assumption) and eventually gave up on challenging tasks in fear of failing. When this occurred, his confidence in his learning abilities decreased and caused him to feel helpless. This also caused a loss in his attention and focus.

Moving into Component Two and emphasizing the goals of the Performance and Self-Reflection Phases of SRL, the SRL graph was effectively modeled. Student J's behavior differed from prior stages as he demonstrated persistence and displayed autonomy as he problem solved on his own. Scaffolding and coaching were provided, but Student J only needed my assistance once. As indicated in Table 7, the amount of times he demonstrated teacher dependence decreased between pre-assessments and post-assessments. His attention and focus were regained as I used strategies that were conducive to his learning style. For example as I modeled the equivalent fractions flash cards and the KWL chart, Student J was participating and active during discussions. Because he was successful in creating the SRL graph and appropriate feedback was given, this caused his confidence and motivation to increase for future activities, such as the equivalent fractions flashcards and KWL chart. In relevance to SRL, here the will or the desire to engage was established as Student J monitored and self-recorded on the SRL graph. The skill, equivalent fractions, was fostered by the development of the will.

Because this post-assessment was almost identical to the pre-assessment, Student J did not achieve his goal for the post-assessment. He had already perceived this task as difficult and removed himself from the risk of failing. By the end of this research, Student J may still believe

that his ability to perform well is fixed rather than malleable. However, findings show that Student J demonstrated an increase in motivation and autonomy in activities prior to the post-assessment. During direct modeling and implementation of SRL strategies, Student J was active in discussions and his attention was controlled. The increase in task motivation here is significant due to the fact that Student J did not like the subject of math at all. This factor helps promote the effectiveness of SRL among students.

Student A

Student A differed from the rest of the students because results from pre-assessments/activities and microanalytic measures concluded that she was attempting self-regulatory processes, but inaccurately analyzing task demands. Similar to the other students however, she also did not like the subject of math, but was still motivated to learn how she can do better and take control of her learning process. In the beginning and during the Forethought phase of SRL, Student A had limited knowledge of strategy choice, yet she was familiar with the importance of goal setting, self-monitoring, and self-reflecting. For example Student A self-monitored as she completed the Quick Check (14.2) pre-assessment, switching between the strategies she was familiar with and determining which one was more useful as she solved the problem. Student A possessed high self-efficacy beliefs in that she was motivated to perform well. Because of these high-self-efficacy beliefs she was able to control her attention and focus on the task presented. However, she exhibited little autonomy and exhibited teacher dependence many times. During pre-assessment and activities, she consistently waited for my approval before she moved on to the next task. Table 7 indicates the number of times Student A referred to me (SRC) for assistance during the pre-assessment. Compared to the other students, she needed constant repetition of

directions for tasks such as the Key SRL terms activity and SRL graph. During the teaching and modeling of the SRL graph, Student A also demonstrated ineffective time management skills and was unable to organize her thoughts and processes. Research in SRL indicates that self-reflective practices increase student awareness on how to effectively organize their thoughts in order to complete tasks in a more productive manner.

As we moved into Component Two and the last two phases of SRL, data collected from the post-assessment indicated that Student A showed an increase in reflective practices and a decrease in teacher dependence. During her post-assessment, Student A effectively used an SRL related strategy (KWL chart) and she also exhibited self-talk as she problem-solved through the task. Self-talk and internal speech creates opportunities for her to effectively manage her time and organize her thoughts. Essentially, she demonstrated metacognition as she was monitoring her cognition by writing down her thoughts in the KWL chart. As she self-reflected about the KWL chart and its effectiveness in her success on mastering her goal for the post-assessment, this discussion helped Student A see the link between effective strategy use and success. In summary, Student A also showed a decrease in teacher dependence and an increase in reflective practices. A decrease in teacher dependence indicates that SRL activities and strategies promoted her to become more autonomous, as well as in control of her learning. She is now aware of how to adjust and monitor her learning in order to accomplish her goals and academically succeed, which also reinforced her self-efficacy beliefs. The mastery of her goal and specific feedback on her strategy use encouraged Student A to continue to strategically plan and self-reflect causing her to engage in the cyclical feedback loop of SRL.

Student H

Results of pre-assessments and activities prior to the teaching of SRL indicated that Student H was not intrinsically motivated particularly for the subject of math and was often distracted, resulting in her inability to control her focus and attention. She did not take up any opportunities to self-regulate because she only responded and participated when encouraged to do so. This also shows that similar to Student A, Student H relied heavily on the teacher's guidance. For example during the diagnostic event measures of Component One, Student H had to be reminded frequently to pay attention and focus on the task presented. Repetition of the questions was also recurrent. Student H's lack of focus control stems from her ineffective use of strategies, which also correlates to her decrease in motivation. However, the manner in which Student H viewed the task presented directly correlated with her motivation to complete the task as observed in the Key SRL terms activity. She did not exhibit frustration in defining the terms, but rather her behavior was energetic and willing to complete the task. Because she believed she could perform well in this task her assigned task value increased and in return motivated her to actually complete the task. This observation indicated that Student H possesses self-regulatory processes, but is not given opportunities to practice these processes. This is especially targeted towards Student H because observations indicated that she is easily distracted. The SRL model helps students remove stimuli in their environments in order to maintain their attention on a specific task. On the Quick Check pre-assessment, results concluded that Student H was exhibiting situational interest. As we moved into Component Two and the Performance and Self-Reflection phases of SRL, activities and strategies worked together to empower Student H and enhance her perception on tasks with low task values. As she saw different strategies being modeled, she was

given opportunities to practice with these strategies and discuss their effectiveness. Observations within this phases and component differed from the first component. The observations collected provided compelling evidence that Student H was motivated during this activity and her situational interests were converted into individual interests. This analysis indicates Student H's increased motivation and task value for the subject of math. As SRC, I provided Student H with strategies that were conducive to her learning. I needed to empower her and change her perceptions on the subject of math. Because I allowed her to create something and gave her an opportunity to practice her newfound manipulative, Student H was more active and engaged than in the previous component and forethought phase. The SRL model helped change her perception on a task she originally did not like. After this activity and related self-reflective discussion, Student H continued to be more actively involved and also, demonstrated self-talk. Her self-talk indicated that I had given her the opportunity to self-regulate. She was also evaluating her thinking process and essentially asking herself the *why* of SRL. Before the implementation of SRL, Student H knew how and what, but she had not discovered the why. Why was she learning what she was learning? Why was she using this strategy, instead of another? As we self-reflected about which strategy was most beneficial in completing the post-assessment, Student H was able to tell me exactly *how* the KWL chart helped her and *why* it was most effective for her. Because the KWL chart helped Student H realize the importance of an effective strategy with correlation to accomplishing a goal, she was motivated to continue her efforts to learn and succeed. Her increase in motivation let to an increase in individual interest for the subject of math. Student H challenged herself and exhibited autonomous behavior by the end of this research study. She had

minimal distractions during the post-assessment, resulting in her ability to make the task set before her a priority, a characteristic of self-regulation.

Impact of SRL in Classroom

Research supports that the more students are self-regulating, the more they are driven to extinguish failure and become more in control of their learning process. Self-regulated learners are problem finders and solvers and are readily motivated to take on a challenging task. Many studies focus on features and opportunities SRL presents to classroom contexts and learning environments (Collins, Brown, & Holum, 1991; Pintrich, 2000; Zimmerman & Martinez-Pons, 1992; Zimmerman 2000). As SRL strategies permeate throughout an individual's learning process, they are also evolving into the classroom. Moreover these findings indicate an increase in student success and metacognitive knowledge, as teachers provide more opportunities for students to engage in self-talk, self-reflection, strategically planning, and goal setting. Self-regulated learning encourages students to actually do, rather than simply saying what they are going to do (Clearly & Zimmerman, 2004; Zimmerman & Martinez-Pons, 1988). This action further fosters the control of the learning environment. As students are deeply involved in their work, there is little room for behavior problems to exist. This allows more time for the teacher to focus on providing extra support for other students, without interruptions or distractions (Horner & Shwery, 2004; Zumbrunn et al., 2011). Providing students with extra support, in addition to specific feedback and effective coaching, empowers and encourages them to attempt new, challenging tasks. In addition, this increases their confidence about their own learning abilities (Collins, Brown, & Holum, 1991).

Another important aspect of self-regulating learning that influences the classroom is developed in the forethought stage, goal setting. Because students are setting more specific mastery-based goals, they are more intrinsically motivated to learn the task and will therefore devote time to accomplish their goal. Since these goals do not rely on the outcome of learning, but rather on mastery throughout the learning process, the student perceptions and attitudes about learning are more optimistic and productive. Productivity is essential in an elementary classroom because of the numerous tasks accomplished in limited time spans. Because of the limited time spent on each task, there is little room for students to be unfocused and uninterested in a subject. However through SRL, the students are well aware of a flexible use of strategies that help them regain their focus and attention to effectively prepare for various academic tasks. For example, the concept of self-monitoring in the SRL model helps students focus their attention by becoming aware of the occasions when they do lose focus and daydream (Clearly & Zimmerman, 2004).

A great deal of research showcases how self-regulated learners pursue positive collaborative learning by being actively involved and more willing to seek out advice from peers. They are willing to exchange information with each other and provide positive support when needed. Due to their ability to control their behavior and exhibit mature problem-solving, they are able to work together to empower each other and stimulate creative expression. As students learn how to verbalize their thinking process and practice self-talk, this promotes and benefits their communicative processes as well. As students become better at expressing their thoughts and emotions, this creates a more efficient rapport between teacher and student. The critical importance in maintaining this rapport is to help students gain confidence in their learning and

abilities. They are encouraged to push pass their limits and pursue challenging tasks (Paris & Paris, 2001). This ability to self-control their learning, fosters autonomy and shifts the responsibility of learning from teacher to student. It is important to develop a resilient sense of autonomy in students as this helps students understand that they are the ones in control of their success (McCombs & Marzano, 1990; Perry et al., 2007; Perry et al., 2003; Torrano & Gonzalez, 2008; Zumbrunn et al., 2011).

In summary, our goal is create life-long learners who are active, goal-orientated, motivated, and reflective. In order for this to be accomplished, self-regulated learners need to be given opportunities to seek information from diverse sources. Therefore, environments need to be information-rich to provide numerous and diverse resources for the students to devour and most importantly, self-regulate.

Commonalties between SRL and Trends

The SREP intervention program is flexible in that it can be applied to current trends today such as, Robert Marzano's pedagogy and instructional practices and the Common Core initiative. As an extension, SRL can also be applied and incorporated within these trends. The next section highlights commonalities that exist between trends and SRL.

Marzano

Robert Marzano's theories and instructional practices have become widespread and prevalent in today's educational curricula. As best stated, his instructional strategies incorporate many factors to increase student achievement and to provide teachers with teaching models and assessment methods in order to improve student cognitive thinking. The core of his philosophy entails setting learning objectives and learning goals for students and also standards based

assessments. Following his research into effective classroom instruction, he has identified nine instructional strategies for effective learning (Marzano et al., 2001).

1. Identifying similarities and differences
2. Summarizing and note taking
3. Reinforcing effort and providing recognition
4. Homework and practice
5. Nonlinguistic representations
6. Cooperative learning
7. Setting objectives and providing feedback
8. Generating and testing hypotheses
9. Cues, questions, and advance organizers

Among these nine instructional practices, SRL characteristics are evident. For example, in *reinforcing effort and providing recognition* teachers are linking student success to motivational factors and personal attributions or beliefs. This strategy is implemented and applied through students recording their progress and self-reflecting and self-evaluating upon this increase or decrease in achievement. To bolster this strategy, teachers must provide students with personalized recognition and specific feedback.

Additional examples where SRL is evident include the following: *cooperative learning, setting objectives and providing feedback, and cues, questions, and advance organizers*.

1. *Cooperative learning* stresses the effects of cooperative groups in a classroom. Encouraging collaboration among students and their peers establishes a positive learning environment. The SRL model also follows this philosophy.
2. *Setting objectives and providing feedback* involve students setting goals to control their learning. These goals should mirror student interests and personal aspirations. Although the SRL model highly emphasizes the practice of goal setting, it places emphasis on teaching students how to set *specific* goals. The primary purpose of *specific* goals is to make them more attainable. Marzano, however, believes emphasis should be placed on goals adaptable to student interests and should not be too specific. Marzano also stresses the importance of positive reinforcement and specific feedback, similar to the SRL model.
3. *Cues, questions, and advance organizers* are strategies to help activate students' prior knowledge. The purpose of organizers should be to expose students to the knowledge they will eventually learn. The KWL chart used in my study as an effective SRL strategy helps activate students' prior knowledge as well as helps students organize their thought processes. In SRL, graphic organizers encourage students to utilize metacognition and self-talk.

In addition to the nine instructional strategies, Robert Marzano, along with Barbara McCombs, identified the *skill* and *will* of students in contribution to the SRL model. Here, the *will* or desire is essential for students to engage in self-regulation. The *will* affects their intrinsic/extrinsic motivation, self-efficacy beliefs, attention control, and goal setting. In essence, the *will* affects key characteristics of self-regulation. The goal in Marzano's theory is to first

establish and develop the *will* in students, while developing the *skill*. The SRL model also hopes to establish and develop proactive, motivated learners who use effective strategies to learn a concept (McCombs & Marzano, 1990).

Common Core Intiative

Common Core instructional methods hope to yield critical, curious, and strategic learners. Rigorous and challenging standards and activities are key components in the Common Core Initiative. The Common Core Initiative is based upon research-based standards that provide students with a high-quality education. These standards are clear, vigorous, and hope to produce proactive doers in society. Explicit Common Core instruction highlights strategic thinking, awareness of one's own thinking process, and recognizing the effects of this thinking. When strategically thinking, students are able to clarify confusion, build new knowledge, and plan how to accomplish their goals. Similar to SRL, Common Core instruction should also teach students how to sift through strategies to problem-solve. Both models highlight the importance of goal setting and working to achieve these goals or objectives. The Common Core Initiative also fosters collaboration and student engagement in group discussions and peer work. Students should creatively be able to express their thoughts across various contexts. Not only are students creatively expressing themselves, they are digging deeper and pushing past their limits. SRL and Common Core can be promoted by shifting students from passive thinkers to active thinkers (Common Core State Standards Initiative, 2012; Harvey & Goudvis, 2013).

To conclude, even though this research is not exactly predictive, it can help the field of education because it amplifies the synergy between self-regulated learning and student academic

success. This research also hoped to prove the flexibility of the SREP model and its integration into current trends and curricula such as Marzano and Common Core.

CHAPTER 5: LIMITATIONS

An important aspect of this study was to illustrate the processes and procedures of the SREP intervention program. However conducting the research as an SRC, I came across many shortcomings that may have affected successful implementation of this program.

Limitation Number One

The execution of this study was done over the last few weeks of school. Students were distracted with end of the year celebrations and activities. In a few instances during my study, the students were called down to the cafeteria for special encouragement from the principal. These external factors may have affected Student J's motivation to reach his desired goal at the end of the study. This is a particularly interesting point because it raises the question of whether Student J is actually capable of achieving his goal in a setting with minimal distractions. While these factors may have impacted Student J, they did not seem to impact Student A or Student H as much. These two students were still able to accomplish their goals and control their attention by the end of this study. Even though this research is not generalizable, implementing SRL impacted over half of the students studied. Two of the students were able to use strategies effectively to regulate their learning. This evidence shows how SRL is successful in teaching students self-control.

Limitation Number Two

This research study took place in a regular education classroom setting, with other instruction taking place. At times students were working in small group activities during the designated time for study implementation, while other times the teacher was wrapping up whole-group instruction and giving directions. Some concerns this could have given rise to were the

following: valuable time spent on consistent repetition of directions and regaining student attention. It was challenging at times for the students to hear my directions and for them to process what I asked them to do. Other students were loud and at times talkative, causing my students to turn around and also engage in their conversations. The beginning of this research study consisted of establishing behavior strategies and maintaining them. Because the students were distracted by others and in return distracting each other, this caused me as SRC to also lose focus in the goals of the study. Student J was the most impacted by these external factors. He demonstrated carelessness as he rushed through his work in order to play on the computer with the other students. By implementing certain activities supported by the SRL model that were conducive to his learning style, I was able to retain some of his attention. Student H was slightly affected by these distractions at the beginning of the study. However for Student H, these concerns were minimized as she learned attention focusing and self-monitoring strategies utilized in the performance control phase of SRL. One positive aspect and benefit of the SREP program is that it is created in alignment with various learning styles. It is flexible enough for modifications to accommodate individual students and their unique characteristics.

Limitation Number Three

As SRC, it was also frustrating to implement SRL effectively because of the limited time spent with the students per day. These time constraints prevented the students from having more opportunities to expand their repertoire of SRL strategies and practices. This limitation placed emphasis on the pacing of teaching students the SRL strategies and also giving them time to practice these strategies.

Limitation Number Four

The final limitation pertains to the amount of research available to me as an undergraduate researcher. Although I was provided with many resources, gaining access to more specific articles of study was challenging.

CHAPTER 6: FUTURE IMPLICATIONS AND RECCOMENDATIONS

The result of my research includes further implications and recommendations for current and future educators in the field. Self-regulated learning offers instructional models to increase student motivation and empower students' personal, academic, and social lives. As SRL strategies permeate throughout the classroom, higher levels of academic success are evident and measurable. Additional implications and recommendations based upon current research and findings of this study are listed below.

Implication Number One

Impacting the academic performance of elementary school students through self-regulation is essential in preparing students to be active participants in society. In the study, the definition of self-regulated learning was applied to the three students representing three different learning styles. Interestingly, the research and data illustrates the positive impact of SRL and benefits of SRL amongst these students. This study could be extended across other student populations such as English language learners and learning-disabled learners.

Implication Number Two

Based on the limitations I encountered during the implementation of the SREP intervention program, further research should include the implementation of this program in settings with minimal to no distractions. This research study took place in a regular education classroom setting, with other instruction taking place. Thus, it is important for future research and implications to replicate these findings and extend them across other academic contexts. Careful examination of similarities and differences between the two contexts would point out the

effectiveness of the SREP model and in general, expand research in the field of self-regulating learning.

Implication Number Three

Although SRL is not prevalent in most of Marzano's instructional strategies, further studies could be conducted to expand research between these two models.

Recommendation Number One

To ensure SRL is supported and encouraged, teachers should offer open-ended discussions and incorporate direct teaching. Direct teaching should consist of effective modeling and scaffolding.

Recommendation Number Two

Students should be challenged and presented with more rigorous activities. Therefore, activities with less emphasis on routine tasks and more emphasis on tasks that require higher-order thinking skills should be provided for the students.

Recommendation Number Three

Consistent with research and my data, teachers should promote student self-talk in order to foster collaboration in the classroom. Self-talk helps students organize their thoughts and ideas. Suggestions include providing the students with more opportunities to work in groups or with peers. Cooperating with others enhances students' self-efficacy beliefs and motivation. They are more motivated to take control of their learning in order to show pride in their accomplishments.

Recommendation Number Four

Students should be consistently encouraged to monitor their learning through self-reflective practices. Encouraging student output through self-reflection will help students organize their thoughts, attitudes, and interests about a specific topic or discussion. Students reflections will also benefit teachers because they can identify and categorize student strenghts and weaknesses.

Recommendation Number Five

Students should be engaged in collaborative conversations and group learning experiences. In collaborative conversations, students work together to discuss and solve problems; eventually helping students internalize their ideas and develop problem solving skills. Internalizing their ideas, developing problem-solving skills, self-reflecting are all essentially key components of self-regulation. In addition, many theorists and research has proven that social interaction is vital for any growing mind. Lev Vygotsky believed that through social interaction learning is attained and when learning is attained, cognitive development is fostered. Children learn from their surroundings and develop their identities through their experiences with others (Blake & Pope, 2008).

Recommendation Number Six

Our goal as educators continues to be to help our students find their individuality, talents, and passions through purposeful, meaningful instruction. By consistently motivating our students and teaching them to motivate others, we can encourage them to embark on their own personal journeys. SRL practices should establish a positive and productive learning environment, where students feel comfortable and their ideas can flow effectively. Positive support, sccafolding, and

specific feedback are suggestions that foster the fact that educators are valuable resources for students.

APPENDIX A: STAGES OF SELF-REGULATED LEARNING (GRAPHIC ORGANIZER)

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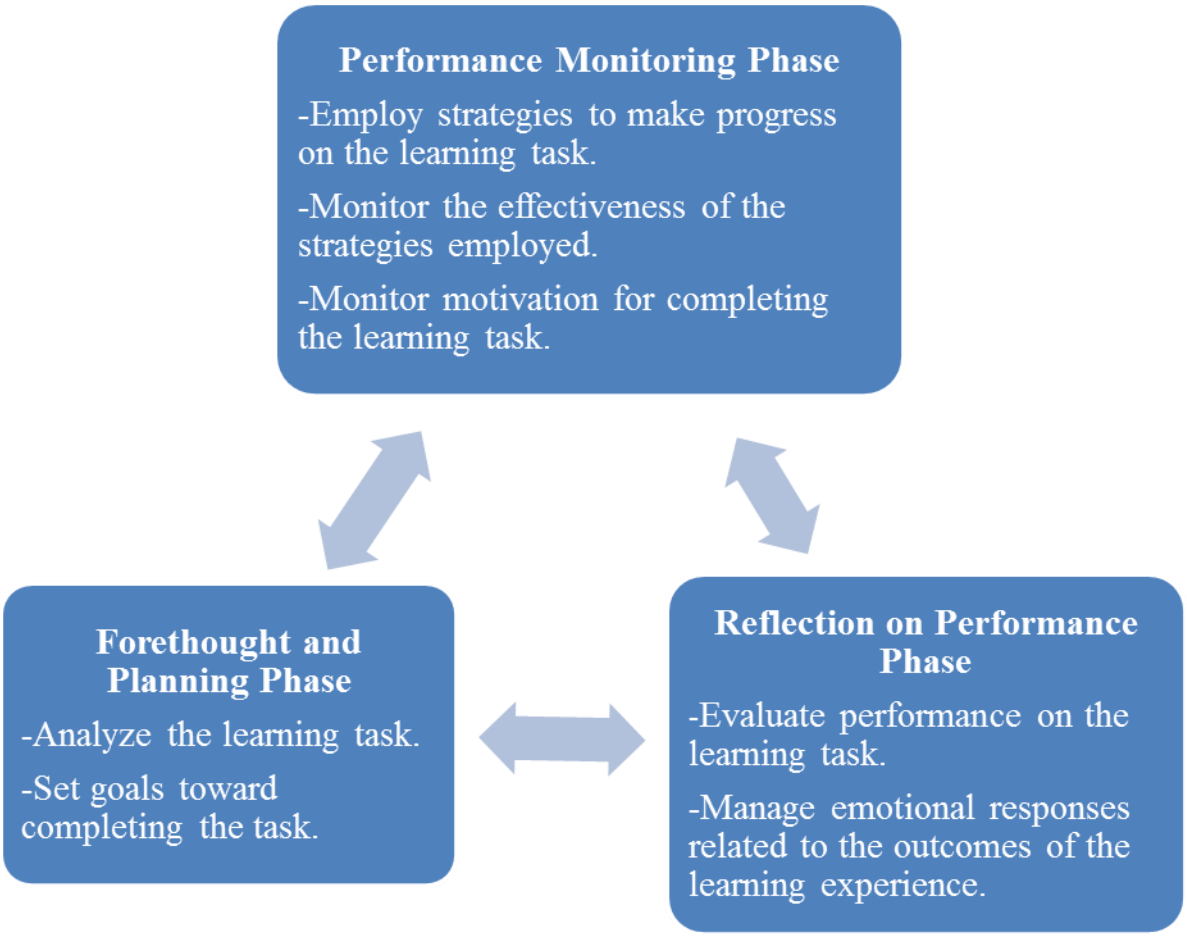

APPENDIX B: PHASES OF SRL AND INFLUENCE IN ON DOMAINS

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Table 1. Phases y Areas for Self-Regulated Learning

(Pintrich, 2000b, p. 454)

Phases	ÁREAS DE REGULACIÓN			
	COGNITION	MOTIVATION/ AFFECT	BEHAVIOR	CONTEXT
1. FORE-THOUGHT PLANNING, AND ACTIVATION	Target goal setting Prior content knowledge activation Metacognitive knowledge activation	Goal orientation adoption Efficacy judgments Ease of Learning judgements (EOLs); perceptions of task difficulty Task value activation Interest activation	(Time and effort planning) (Planning for self-observations of behavior)	(Perceptions of task) (Perceptions of context)
2. MONITORING	Metacognitive awareness and monitoring of cognition (FOKs, JOLs)	Awareness and monitoring of motivation and affect	Awareness and monitoring of effort, time use, need for help Self-observation of behavior	Monitoring changing task and context conditions
3. CONTROL	Selection and adaptation of cognitive strategies for learning, thinking	Selection and adaptation of strategies for managing motivation and affect	Increase/decrease effort Persist, give up Help-seeking behavior	Change or renegotiate task Change or leave context
4. REACTION AND REFLECTION	Cognitive judgments Attributions	Affective reactions Attributions	Behavior choice	Evaluation of task Evaluation of context

APPENDIX C: SELF-REGULATION EMPOWERMENT PROGRAM

(SREP)

APPENDIX C: SELF-REGULATION EMPOWERMENT PROGRAM (SREP)

The SREP was developed by Timothy J. Clearly and Barry J. Zimmerman, in compliance with the Self-Regulated Learning model. This program is based on qualitative and microanalytic measures of specific student processes during each phase of SRL. These measures help target problem areas for the student and ensure the appropriate intervention is taken place. This model still promotes and fosters student autonomy by allowing the student to analyze their learning behaviors and develop goals for success. The SREP model is separated into two components: diagnostic assessment and developing the self-regulated learner. Below are the three tables that summarize the components in SREP and are necessary for the implementation of the SREP model.

Table 1
Assessment Specificity Guide Used During Diagnostic Assessment Component

Level of Specificity	Assessment Question	Assessment Procedures
Class	In which class(es) does the student struggle?	Review report cards, teacher interviews
Grading Criteria	On which grading criteria in that class does the student perform poorly?	Review tests/quizzes/lab reports, teacher interview
Strategy	Which study and self-regulation strategies does the student use to perform well in that class?	Retrospective self-reports, structured interview, study material review
Microanalytic	How does the student select, use, and regulate specific strategies to perform specific tasks within that particular class?	Think alouds, microanalytic assessment procedures

Table 2
Examples of Self-Regulation Microanalytic Assessment Questions

Phases of Cyclical Feedback Loop	Self-Regulation Processes	Assessment Questions
Forethought	Goal Setting	Do you have a goal when studying for your math tests? Explain.
		Do have a goal you are trying to achieve on your math tests? Explain.
	Strategy Choice	How did you decide to use this strategy when preparing for math tests?
	Self-Efficacy[a]	How sure are you that you can get an 85 on your next math test?
		How sure are you that you can solve 70% of these math problems?
	Intrinsic Interest[a]	How interesting is studying/preparing for your math tests?
		How much do you enjoy studying/preparing for your math tests?
Performance	Attention Focusing	Do you have to try to motivate yourself when studying for math tests?
		What do you do when you don't feel like studying for your math tests?
	Self-Recording	Do you keep track of where you study for your math tests?
		Do you keep track of how long you study for your math tests?
Self-Reflection	Self-Evaluation	How do you determine if you performed well on your math test?
	Satisfaction[a]	How satisfied are you with your performance on your last math test?
	Causal Attributions	What is the main reason why you got a 75 on your last math test?
	Adaptive Inferences	What do you need to do to improve your performance on your next math test?

Note. The reference to math tests was for illustrative purposes only. Microanalytic assessment questions are context specific and thus can be modified to assess any subject area.

[a]Students are asked to respond based on a 100-point scale.

Table 3

Goals and Intervention Procedures Used in Self-Regulated Learner Development Component

Intervention Steps	Goal of Intervention Steps	Interventions
Empowerment	To enhance student perceptions of control over academic performance and learning processes	Self-monitoring forms, graphing procedures
Study/Learning Strategies	To teach the student various study/learning strategies and self-regulation strategies	Cognitive modeling, cognitive coaching, guided practice
Cyclical Feedback Loop	To teach the student how to use forethought, performance control, and self-reflection phase processes in a cyclical manner	Self-regulation graph, cognitive modeling, cognitive coaching

APPENDIX D: SELF-SYSTEM (GRAPHIC ORGANIZER)

APPENDIX D: SELF-SYSTEM (GRAPHIC ORGANIZER)

Robert J. Marzano and Barbara L. McCombs analysis of self as an agent in the Self-Regulated Learning model.

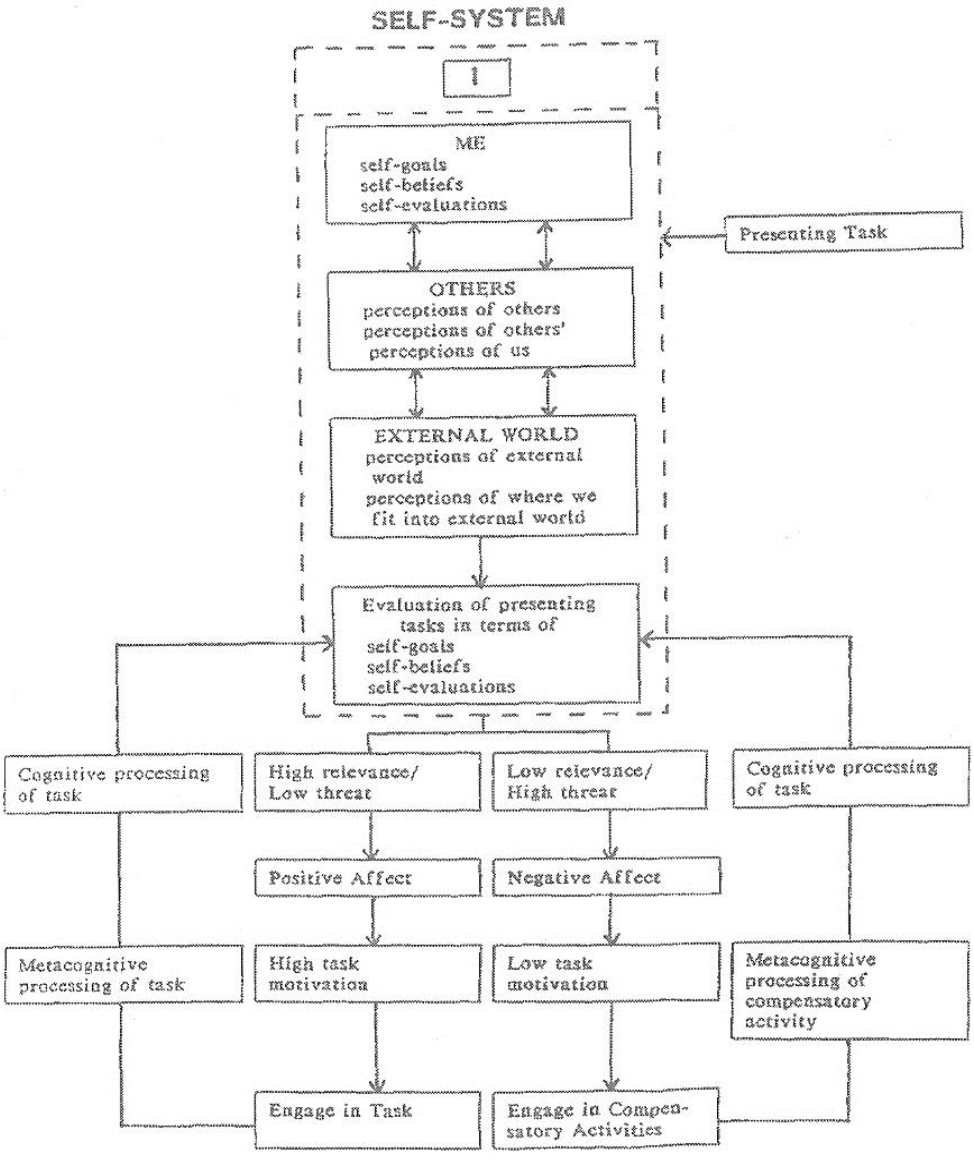
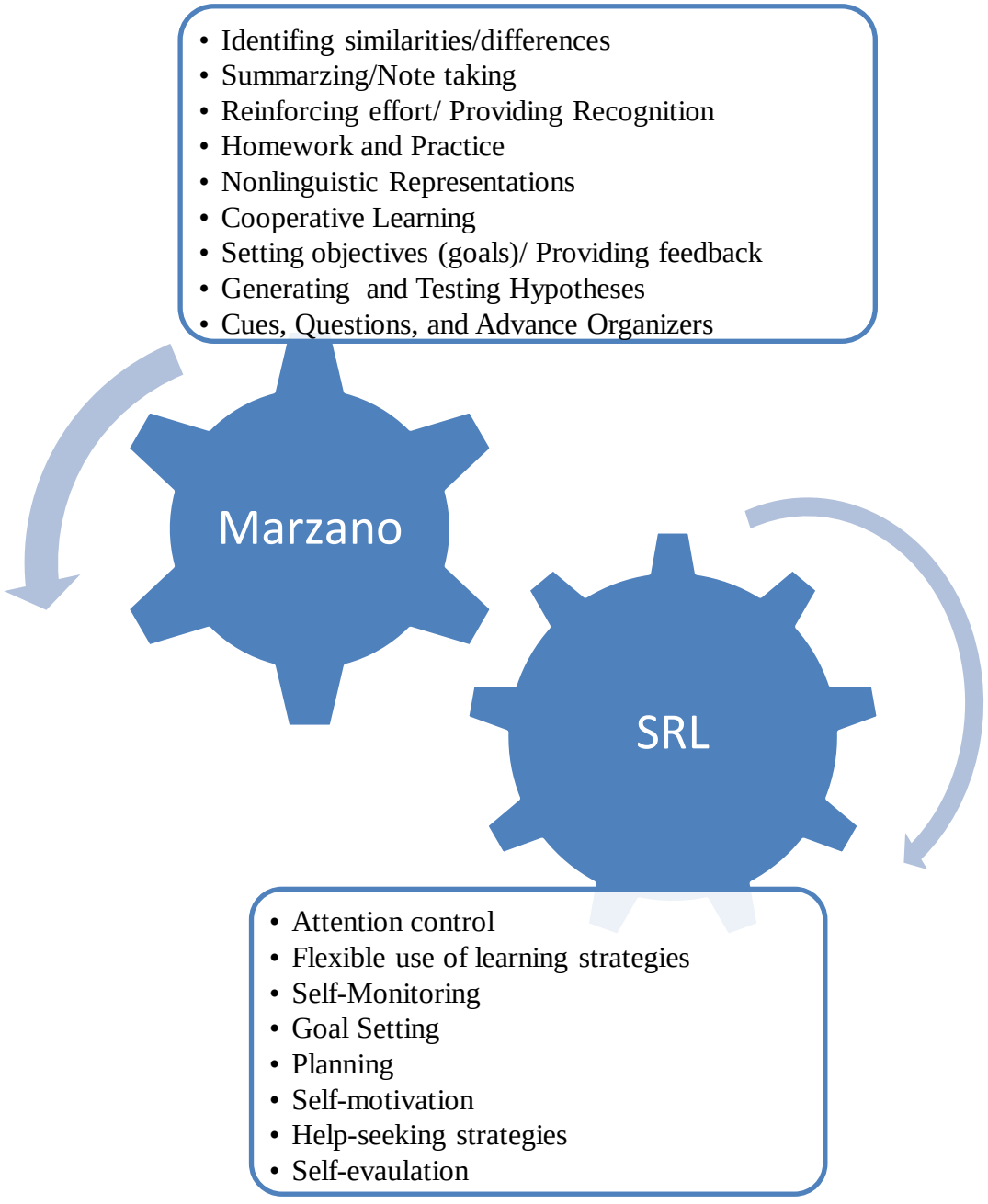


FIGURE 2 Real-time self-as-agent processing framework.

APPENDIX E: SELF-REGULATED LEARNING STRATEGIES VS MARZANO INSTRUCTIONAL STRATEGIES

APPENDIX E: SELF-REGULATED LEARNING STRATEGIES VS MARZANO INSTRUCTIONAL STRATEGIES



APPENDIX F: SAMPLE PERSONAL INTEREST INVENTORY

QUESTIONS

APPENDIX F: SAMPLE PERSONAL INTEREST INVENTORY QUESTIONS

1. One interesting fact about yourself.
2. What is your favorite subject in school? Why?
3. Least favorite subject in school? Why?
4. Favorite reading book? Why?
5. Do you consider yourself ready for 5^{th} grade? Why? What do you do that makes you successful?
6. Do you consider yourself a good learner? (everything taught you understand, go home and study, etc)
7. What makes a good learner? Is it the teacher, the parents, studying, the school, the homework, etc?
8. When you come across a math problem in the classroom, what does your teacher do to help you understand the problem? (asks questions, shows pictures, etc.)
9. When you come across a math problem at home and no one is there to help, what do you do? Do you use any specific strategies?
10. What do you do to prepare for a math test?

APPENDIX G: SAMPLE KEY SRL TERMS WITH QUESTIONS

APPENDIX G: SAMPLE KEY SRL TERMS WITH QUESTIONS

1. **Reflection**
    - If I ask you to self-reflect, what am I asking you to do?
    - If I say let's reflect upon our writing, what are we doing?
2. **Goal**
    - What are goals?
    - When I tell you to set a goal for the summer, what does that mean?
3. **Motivation**
    - What is motivation?
    - What motivates you to do something?
4. **Strategy**
    - What is a strategy?
    - When I tell you to use a strategy, what am I asking you to do?

APPENDIX H: SCHOOL DISTRICT APPROVAL

APPENDIX H: SCHOOL DISTRICT APPROVAL

Submit this form and a copy of your proposal to:
Accountability, Research, and Assessment
P.O. Box 271
Orlando, FL 32802-0271

Orange County Public Schools

RESEARCH REQUEST FORM

RECEIVED JUL 22 2013

Your research proposal should include:
- Project Title
- Purpose and Research Problem
- Instruments
- Procedures and Proposed Data Analysis

Requester's Name Duaa Lutfi Date July 21, 2013

E-mail [redacted] Phone [redacted]

Address [redacted] Orlando, Florida [redacted]
Street City, State Zip

Institutional Affiliation University of Central Florida

Project Director or Advisor Elsie, L. Olan Phone [redacted]

Degree Sought: (check one) ☐ Associate ☐ Doctorate ☒ Bachelor's ☐ Not Applicable ☐ Master's ☐ Specialist

Project Title: The Realm of Self-Regulated Learning (SRL)

ESTIMATED INVOLVEMENT

PERSONNEL/CENTERS	NUMBER	AMOUNT OF TIME (DAYS, HOURS, ETC.)	SPECIFY SCHOOLS BY NAME AND NUMBER OF TEACHERS, ADMINISTRATORS, ETC.
Students	3	6 days, 30 mins	4th grade
Teachers	1		
Administrators	1		
Schools/Centers	1		Hunters Creek Elementary
Others (specify)			

Specify possible benefits to students/school system: Students will benefit by becoming aware of how to set goals and monitor these goals. They will monitor their own learning and gain a sense of independence.

ASSURANCE

Using the proposed procedures and instrument, I hereby agree to conduct research in accordance with the policies of the Orange County Public Schools. Deviations from the approved procedures shall be cleared through the Senior Director of Accountability, Research, and Assessment. Reports and materials shall be supplied as specified.

Requester's Signature [signature]

Approval Granted: ☒ Yes ☐ No Date: July 28TH, 2013

Signature of the Senior Director for Accountability, Research, and Assessment [signature]

[illegible] Senior Director, Accountability [illegible] depending upon an

APPENDIX I: IRB APPROVAL LETTER

APPENDIX I: IRB APPROVAL LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Elsie L. Olan** and Co-PI: **Dana K. Lutfi**

Date: **June 14, 2013**

Dear Researcher:

On 6/14.2013, the IRB approved the following modifications / human participant research until 6/13/2014 inclusive:

Type of Review:	UCF Initial Review Submission Form
Project Title:	The Realm of Self-Regulated Learning (SRL): An Examination of SRL in a language arts elementary setting and its relevancy to trends in our current curricula.
Investigator:	Elsie L. Olan
IRB Number:	SBE-13-09412
Funding Agency:	
Grant Title:	
Research ID:	N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at https://iris.research.ucf.edu.

If continuing review approval is not granted before the expiration date of 6/13/2014, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 06/14/2013 10:30:12 AM EDT

IRB Coordinator

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