5-1-2024

Using Efficacious Content Area Literacy Practices to Support Student Improvement and Perception of Self-Efficacy

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USING EFFICACIOUS CONTENT AREA LITERACY PRACTICES TO SUPPORT STUDENT IMPROVEMENT AND PERCEPTION OF SELF-EFFICACY

by

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A Thesis

Submitted to the
Department of Critical Literacy, Technology, and Multilingual Education
College of Education
In partial fulfillment of the requirement
For the degree of
Master of Arts in Reading Education
at
Rowan University
May 1, 2024

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Dedications

I would like to dedicate this thesis to my parents and sisters. Thank you for always encouraging me to go for my dreams and pursue everything I want. I wouldn't have been able to complete my degree and write this thesis without your never ending love and support. I am beyond lucky to have you. I love you all.

I would also like to dedicate this thesis to my fiancé. Thank you for your endless love, hugs, and belly laughs while I was working on my degree the past two years, but especially this final year. Thank you for listening to me, buying me flowers, and being my favorite person. Let's plan our wedding! I love you.

Acknowledgements

This thesis would not have been possible without my students. Thank you for being patient with me, cheering for me when I finished a chapter, and celebrating our success together. Thank you for your positive words when I needed them most. I am a better teacher because of you.

Thank you to my principals and fellow teachers on my teams at all the schools I have worked at while completing this degree. Everyone who has listened to me think out loud and provided encouragement has helped me in more ways than you know.

Thank you to my advisor, Dr. Madden, for her guidance and support in this process. I have learned so much from you and I would've been truly lost this past year without you.

Thank you to Taylor Swift and Spotify's "Calming Classical" playlist for being the soundtrack to this thesis. This process would've been boring without you both.

Abstract

Christine L. McCabe
USING EFFICACIOUS CONTENT AREA LITERACY PRACTICES TO SUPPORT STUDENT IMPROVEMENT AND PERCEPTION OF SELF-EFFICACY
2023-2024
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This thesis examines how students' self-efficacy, confidence, and motivation change when students use content area literacy practices in math. This study was guided by the affective theories of Bandura, Maslow, and Guthrie & Wigfield. This study used qualitative research, focusing on collecting data through anecdotal evidence, student self-evaluation surveys, student journal responses, and a teacher research journal. Throughout the six week study, students participated in lessons focused on improving self-efficacy, confidence and motivation. Additionally, students learned to make connections between math and literacy through math literacy tasks, such as numberless word problems. Following the study, data was analyzed through triangulation and patterns were determined. The data collected and analyzed suggest that using math literacy practices with primary aged students improved their perceptions of their own self-efficacy. At the conclusion of the study, students had a better understanding of self-efficacy and their own feelings about their abilities to use math literacy skills. This study is relevant to elementary school teachers because it provides insight to help teachers make connections between literacy and other subjects for primary aged students.

Table of Contents

Table of Contents (Continued)

List of Figures

List of Figures (Continued)

Figure Page

List of Tables

Table Page

Chapter 1

Scope of the Study

> "If I had to do it by myself, I could do it, but if I did it with somebody, I guess I would feel a little more confident."
>
> -*Cece, grade 2*

In the middle of the 2022-2023 school year, I decided to start looking for new jobs in an attempt to be closer to home. In the process, I switched from being a first grade teacher and teaching all subjects to become a second grade math and science teacher. I always had co-teachers that liked teaching math, while I liked teaching ELA subjects, so I had never really dived into teaching math and I thought it might be a fun new avenue to explore. However, the irony of being a math and science teacher while pursuing my reading specialist certification was not lost on me.

Starting in the middle of the year meant that my new class already had existing routines and could run the classroom by themselves. Observing this was quite intimidating to me, so when I took over for the long term sub, I decided to stick to what I knew best and just continue teaching the same way I did in my previous position but just applying those pedagogical practices to math and science instead of ELA. After the transition days, we jumped right into three digit addition and subtraction. On my first day, my students were doing the "Try it" problem in their workbook and I was stressing about teaching them correctly because I had never taught three digit addition and subtraction before.

After we solved the problem together, I told them to write their answer in a complete sentence. I said it very simply and told them to make sure they used a capital

letter and punctuation at the end. I didn't think anything of it. Immediately, all of their faces looked at me in shock.

One brave student raised their hand, "Why do we have to write a sentence?"

I panicked.

"Because writing still matters in math", I said.

Looking back, I am sure my voice was shaky and I was probably visibly nervous to be questioned on my first day by twenty-one eight year olds. They had no experience combining writing and math and seeing that the two could work together outside of their "subject" blocks in the day. So I said it and hoped we could move on. They wrote their sentences and I hoped that the next day would be easier. Turns out, the next day, they gave me the same confused faces and I repeated the same thing: "Writing still matters in math".

It became our slogan and they started saying it back to me when I would make them write a sentence. Their lack of connection between these two subjects that shouldn't be separated confused me. I wondered why there was little emphasis on writing in math. Why had my students never been asked to write, spell, and use punctuation in a subject besides writing?

Purpose Statement

The purpose of this study is to determine the role of self-efficacy in students' approach to using content area literacy. This research is significant because there is limited research on primary aged students and their confidence in transferring their literacy skills to other subjects besides reading and writing. At the primary age, students' confidence, motivation, and self-efficacy are beginning to develop to support their growth

throughout their educational careers. These critical affective beliefs about themselves will support students throughout their entire educational career. Therefore, confidence, motivation, and self-efficacy are essential skills to develop as students prepare for future grades and careers beyond school.

Psychologist Albert Bandura developed the theory of self-efficacy, or an individual's tendency to choose tasks that they believe they can accomplish (Bandura, 1977). Bandura identified four elements that can improve self-efficacy: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Schunk & Zimmerman (2007) took Bandura's idea of self-efficacy and applied it to education. They found that modeling increases student feelings of success by watching other people take steps to succeed. In an educational setting, a survey can be effective in assessing student beliefs about their abilities.

In a classroom, Ozgen & Bindak (2011), supported the work of Schunk & Zimmerman when they explained ways to improve student self-efficacy. When studying high school students, having students model a task completed successfully is one strategy for improving self-efficacy. Additionally, goal setting, giving feedback quickly to students, and encouraging positive work ethics have also been found to support self-efficacy improvement. Perceived teacher support can also improve self-efficacy. Kitsantas et. al (2020) found that "perceived teacher support and cognitive activation each played a unique predictive role in the model, and that self-efficacy perceptions were the strongest and most consistent mediator" (p. 266). Teachers have a critical role in improving student perceptions of self-efficacy in all content areas.

Specific to math classrooms, students can improve self-efficacy perceptions through real world applications of math skills. Students who had medium to high levels of self-efficacy were more likely to understand how math could help them in the real world and apply what they were learning beyond the classroom (Ozgen, 2013). Teachers can also help students think deeper about math to increase their engagement, positive beliefs about math, and overall success (Kitsantas et. al., 2020). Yıldız & Yetkin Özdemir found that student feelings of success are directly connected to math achievement. In studying two students with opposite levels of math achievement, the authors concluded that "successful experiences in mathematics are reflected positively in self-efficacy beliefs, whereas failures are reflected negatively; thus, both of them affect mathematics achievement" (p. 203). The ability of students to use literacy skills in a math classroom setting is essential for students feeling confident in applying literacy skills beyond their typical ELA subjects. There is little research on the subject of student confidence in using content area literacy strategies in the primary grades. Therefore, the purpose of this study is to show how students can apply those skills and feel confident in doing so.

Statement of Research Problem and Question

The research question for this study is: When using efficacious content area literacy practices in math, how do students perceive and improve their confidence and motivation?

The sub questions in this study are:

- How do students improve their self-efficacy in math?
- How does teacher self-efficacy impact student self-efficacy?

Story of the Question

Throughout my coursework in the MA in Reading program, I found the most interest in content area literacy. It is an area where I had very little training and exposure, especially during professional development in my career. I wanted to continue to learn more and explore ways to connect literacy to other content areas. As a math and science teacher, I am always looking for ways to incorporate literacy into my instruction. When I began looking more into ways that my curriculum offered literacy connections, I found very little. I wanted to go beyond simply teaching vocabulary and moving on. It surprised me that there was little emphasis placed on students making connections between the subjects, despite their importance.

Before teaching exclusively math and science, I encountered a few students that struggled significantly with their confidence and beliefs in themselves as readers. These students always fascinated me because I could often tell that their abilities were far beyond what they thought they could do. As a teacher, I had a few strategies that I thought were sufficient, but I felt myself continuing to look for ways to improve their confidence each year. I have had parent teacher conferences where parents are concerned about their child being a "good reader" and I had to explain that they were a good reader, but their lack of confidence in themselves made reading more challenging. Since moving to a math and science position, it has been interesting to collaborate with my ELA team teacher and discuss students with low self-efficacy and the connection between their ability to use literacy skills in math and science class.

My question was born out of interest in combining these two areas: self-efficacy and content area literacy. Upon further investigation, I found that there was little research

already done in this area with primary aged students in the United States, leading me to want to explore this question more. I wanted to learn more ways to help my students feel confident in their abilities as readers and writers in math class.

Organization of Thesis

This thesis will be divided into five chapters. This first chapter, the introduction, will introduce readers to the research question and its significance in my career. Chapter two is a literature review, where prominent literature and seminal theories will be presented. The research is centered around self-efficacy, confidence, motivation, and content area literacy, specifically mathematics literacy. These studies and theories provide the basis for the study. Chapter three provides the research design for this qualitative study. It gives insight into the school, classroom, students, and community where the study is conducted. It also shares how the study was conducted and how data was collected. Chapter four explains the findings of the study and data collection. Finally, chapter five summarizes the findings and shares implications for future research.

Chapter 2

Review of the Literature

> "In first grade, we did a little test and there were different smarts and my smart was math so whenever we are taking a quiz in math, I usually always get it right"
>
> - *Jess, grade 2*

Introduction

The idea of being a "good reader" is one that students, families, and educators have explored throughout the history of education. The idea of being a "good reader" is often seen as the ability to read well in a reading class. Beyond language arts classes, the idea of being a strong literacy student can be applied to other content areas and student beliefs around this subject can greatly influence student success in using these various literacies. In this chapter, theories and research related to self-efficacy and mathematics literacy will be explored. This chapter explores theories and research related to self-efficacy and mathematics literacy. The first section presents seminal theories that are critical to understanding current research on content area literacy and self-efficacy practices because they are the basis of the current research. The second section looks closer at the relationship between self-efficacy, motivation, and literacy. The third section presents research on educator self-efficacy, showing the need for stronger teacher preparation programs that prepare future educators to confidently use content area literacy in their classrooms. The final section presents research on mathematics self-efficacy and mathematical literacy using the seminal theories, the understanding of literacy self-efficacy, and the need for stronger educator self-efficacy.

Affective Theories

The major theory guiding this study is Albert Bandura's theory of self-efficacy (1977). Bandura's work is essential to the study of self-efficacy and Bandura's theory states that people will choose activities that they believe they can accomplish and that are not intimidating (p. 193-194). Self-efficacy, according to Bandura, is tied to coping skills, effort, and goal setting. These reciprocal interactions influence a person's perspective on their success. Bandura's work takes a social learning approach, where he looks at four elements that influence self-efficacy: performance accomplishments, vicarious experience, verbal persuasion, and physiological states.

Performance accomplishments is the idea that with repeated success in a task, people will feel a stronger motivation to complete it. Vicarious experience comes from watching others perform a similar or identical task. It is a less reliable source of self-efficacy, as it relies on comparison and modeling. Verbal persuasion is when people are socially convinced that they can accomplish something. This element has many limitations, especially since the people being persuaded do not have personal experience doing the task. Finally, the physiological state, or emotional arousal, influences self-efficacy because their anxiety or stress levels can greatly influence their beliefs in their own abilities at the time. Bandura's work shows that people's own fears can create a more stressful situation in their head when approaching a situation, leading to less success (Bandura, 1977).

Another seminal theorist in the field of motivation is Abraham Maslow. Maslow's 1943 work, *A Theory of Human Motivation* highlights the ways that people are motivated and the hierarchy of needs. Maslow argued that basic needs must be met in order for

humans to be motivated by additional external factors. Maslow's theory started with basic needs, such as food and shelter, before moving on to more complex needs such as social acceptance and fulfillment. Maslow's work on motivation shapes this study because it gives insight into a wide variety of needs that students may be motivated to achieve. As readers, students may be motivated to read more to achieve a more complex need like success in school, but some students may prioritize literacy below basic needs such as food and shelter. Putting literacy at a lower priority will show in the classroom and in their academic performance.

Engagement theory, specifically the work of John Guthrie & Allan Wigfield, also shapes this study. Their studies surrounding reading engagement are essential in providing insight into why children choose selected texts, how they persist in reading, and how engagement can impact instruction. Guthrie & Wigfield state that "children with higher intrinsic motivation read more, and with more breadth, than students with lower intrinsic motivation" (1997, p. 426). This theory shapes the study because it relates to the literature that students pick when reading independently and their attention during reading. Wigfield et al. (2008) researched the effects of reading engagement with reading comprehension. They examined classroom practices and instructional strategies to find their effects on students' overall comprehension and engagement in reading. In their findings, the authors suggest that "teachers can attempt to optimize students' reading engagement in the classroom with a realistic expectation that this engagement will increase students' reading comprehension" (p. 444). Wigfield & Guthrie's works show that engagement is an essential component in students developing a positive relationship with reading.

Self-efficacy, motivation, and engagement theories work together to guide this study. These theories give explanations to student choice in texts and help explain student beliefs about themselves as students. In this study, student self-efficacy will be explored in mathematics. The work of these seminal theorists will help guide understanding of student positive or negative beliefs about their abilities, that may change depending on the subject.

Self-Efficacy and Literacy

There is extensive research done on the topic of self-efficacy and motivation, especially in regards to literacy. In the studies in this section, literacy refers to traditional reading and writing that is typically done in an ELA class. One of the seminal pieces in the study of student self-efficacy is Wigfield & Guthrie's *Relations of children's motivation for reading to the amount and breadth of their reading* (1997). Wigfield & Guthrie used a revised version of the Motivation for Reading Questionnaire (MRQ) to assess a variety of areas, including self-efficacy. In this survey, fourth and fifth grade students were asked to answer using a response of 1 to 4, with descriptions for each number. The data showed that there were many factors involved in reading motivation, but showed that "children with higher intrinsic motivation read more, and with more breadth, than students with lower intrinsic motivation" (p. 426). This data shows an important connection between self-efficacy and literacy that can be used to support self-efficacy in other content areas.

Although the concept of self-efficacy was originally proposed by Albert Bandura in psychology, it was modified for education by Schunk & Zimmerman. In their 2007 article, *Influencing Children's Self-Efficacy and Self-Regulation of Reading and Writing*

Through Modeling, they added to Bandura's theory by saying that modeling increases student feelings of success by seeing the steps that other people take to succeed in a task. This research applies the theories of self-efficacy to instruction and education. The authors argue that teachers should use modeling to teach self-regulation skills, which will enable students to increase their self-efficacy (Schunk & Zimmerman, 2007).

Wilson and Trainin (2007) conducted research in first grade classrooms in southern California elementary schools. They created and used the Early Literacy Motivation Scale to guide their research and assess student feelings towards motivation and achievement in regards to literacy (specifically reading, writing, and language). This scale assessed students using direct and hypothetical questions geared towards their feelings about their own literacy abilities. Their findings showed that students who had higher achievement in literacy (reading, writing, and language) also had higher feelings of self-efficacy. Although this study focuses on literacy in terms of reading and writing, it suggests that there is a correlation between students feeling confident in their abilities and choosing efficacious tasks based on their reading abilities.

Teacher support can also shape student self-efficacy. Kitsantas et al. (2020) looked at how teacher support is connected to student beliefs about motivation, engagement, and confidence in relation to mathematics literacy. In this study, the researchers worked with high school aged international students. Grounded in Bandura's theory of self-efficacy, the findings showed that teacher support is directly related to a variety of other areas, most notably, self-efficacy. They wrote "perceived teacher support and cognitive activation each played a unique predictive role in the model, and that self-efficacy perceptions were the strongest and most consistent mediator" (p. 266). This

study shows that providing teachers more support in verbally stating their positive beliefs about student success and furthering their confidence can have a direct impact on their academic performance. In the discussion of their findings, the authors expand on this finding by showing that teachers can help students build confidence in their own work by teaching them to persevere, have a strong work ethic, and model confidence for their students.

Educator Self-Efficacy

Although researchers argue for student self-efficacy, educator self-efficacy is a heavily researched topic. Educator self-efficacy is the idea that teachers feel confident in teaching a certain subject or topic. Across content areas and grade levels, using journals is a way to help students and teachers track efficacious behaviors. Sigmon (2019) observed fourth grade students using journals two times a day to track their learning in social studies and look for ways that their teacher can improve their self-efficacy. The use of the Elementary School version of the MUSIC Model of Academic Motivation Inventory helped track the impact of the journals on the students' beliefs about their learning. The MUSIC Model of Academic Motivation Inventory is a survey to assess student motivation. In this inventory, students shared their perception of their teachers' beliefs about their success. Based on the inventories, one of the predictors of student success and increased self-efficacy was the belief that their teacher cared about their success by reading their journals in social studies. The teacher read their journals every week and provided feedback to increase student motivation to write more and achieve more in school.

Specific to content area literacy, student self-efficacy is not the only necessary efficacy in the classroom. Many teacher preparation programs include little to no coursework on content area literacy that teach pre-service teachers ways to successfully incorporate literacy beyond the main subjects of reading and writing. Educators also need self-efficacy to successfully teach, model and support students with learning and applying content area literacy. The International Literacy Association's (ILA) 2020 "What's Hot in Literacy Report" found that 91% of teachers view their top responsibility as teaching students content area literacy to apply to other subject areas. But in the same report, 30% of teachers said they need more support with content area literacy. Educators are expected to teach a skill in which they lack the self-efficacy to successfully teach.

Gerde et al. (2018) take a closer look at teacher self-efficacy. In this study, the researchers studied Head Start teachers and surveyed the teachers about their own self-efficacy related to the subjects they teach. Using quantitative research, they found that there is a gap between teacher self-efficacy in literacy subjects of reading, writing, and phonics, and teacher self-efficacy in science. The authors explain that each subject requires their own set of domain specific vocabulary, content, and pedagogical knowledge and that teachers have to feel confident in their own understanding of these domain specific areas before they can teach them to their students.

In their discussion, the authors share that their research showed that teachers were engaging in literacy activities (reading and writing) multiple times each week, but they were engaging in math and science activities significantly less often. The reasoning is that teachers understand the importance of literacy on children's developmental growth. In comparison to literacy, teachers do not feel as efficacious in teaching science to their

students because of a lack of understanding of science based on previous educational experiences, a dislike for science based on their own education, or a lack of professional development about how to teach science. Furthering their research, Gerde et al. suggest that “pre-service and in-service education programs should provide teachers with content and practices for science rather than exclusively focusing on literacy” (p. 70). The study shows that through a meta-analysis of seventy three professional development opportunities, thirty nine opportunities were presented for language or literacy and there was one opportunity related to science instruction. When teachers have a strong self-efficacy for teaching science to their students, it provides more opportunities for students to learn science in fun and engaging ways in school.

One literacy strategy that educators can use in content areas beyond reading and writing is poetry. Love, Napoli, & Lee (2023) studied how pre-service teachers can use poetry in a three week integrated science unit to improve their self-efficacy in teaching science. The pre-service teachers (PSTs) participating in the study rated their self-efficacy in teaching science on a scale. In collaboration between the literacy and science departments, the PSTs were given mentor texts and science poems to use to create their own science based poetry. Following the unit, 50% of PSTs agreed that using poetry would be a helpful tool in teaching science. None of the participating PSTs disagreed. Additionally, the researchers found through the PSTs self-evaluation that using poetry to teach science helped them improve their self-efficacy, increase their understanding of the science content they were teaching, and enhance student learning. Many science programs taught in public schools do not include literacy based instructional tools, such

as poetry, in their programs. However, it is clear from this study that supplementing the curriculum with poetry increased teacher self-efficacy and student achievement.

To increase educator self-efficacy in teaching content areas beyond literacy, Yang et al. (2020) call for more support for teachers in incorporating content area literacy into other subjects beyond reading and writing. In a review of the literature, the authors cite that there needs to be an increase in the understanding between theory, research, and practice related to content area literacy in order for teachers to feel successful implementing it. They state "Merely studying and acknowledging what is presented in a theory is not sufficient; rather, a theory needs to be integrated into the solution to a problem. Only through understanding the theoretical underpinnings of practices can teachers effectively implement recommended instructional approaches and discerningly make necessary modifications to accommodate the diverse needs of their students" (p. 204-205). For teachers to be able to use and apply literacy strategies beyond the typical subjects of reading and writing, teachers need to feel confident in their own abilities in math, science, and social studies. In order for students to grow, teachers need more support in understanding how to teach subjects where they might not personally feel confident.

The research presented in this section suggests the further need for teacher preparation in using content area literacy in math and science. Most studies presented in this section consider the lack of research surrounding the areas of teacher self-efficacy in content area literacy instruction. There needs to be further research about how teachers can best apply literacy strategies to subjects such as math and science.

Mathematics Self-Efficacy

As presented in previous sections, there is an established body of research regarding student self-efficacy and traditional literacy, such as reading and writing in an ELA class. Additionally, there is research that shows how future educators can use self-efficacy to support both traditional literacy and content area literacy. However, there is little research conducted within the United States related to primary students' self-efficacy in content area literacy.

In addition to looking at teacher factors that can improve self-efficacy, Kitsantas et al. (2020) studied the impact of those influences on student self-efficacy in using mathematics literacy. Their study worked with students in 65 countries, all 15 years old. Their reasoning for this focus was based on students using mathematics literacies to support their use of mathematics beyond high school and in their careers. They share that students in the United States continue to "perceive mathematics to be less relevant to their lives" (p. 257). Throughout their work, they found that one strategy to support student self-efficacy in math is helping students think deeper about math. Deeper thinking in math is connected to engagement, positive beliefs about math, and overall success. As stated previously, Kitsantas et al. found that teachers who show their students that they care about their success in math have more success in developing motivation, confidence, and more understanding of mathematics components.

Ozgen & Binkdak (2011) surveyed and observed high school aged students to research student beliefs around math literacy. Although the work was done in Turkey, the results can be applied to education in the United States. The study found that self-efficacy is related to a variety of factors including school type, gender, parents' education levels,

and the importance given to math classes. The study provided strategies for teachers to use when working to increase student self-efficacy such as goal setting, giving feedback quickly to students, encouraging positive work ethics, and using students who have been successful in the task to model for other students who are struggling. Ozgen (2013) researched the impact of real world connections in math to student self-efficacy. His study used high school students in Turkey and studied self-efficacy using a math literacy self-efficacy scale and an interview. The focus of this study was on the connection between real world math applications and self-efficacy. The study found that students who had medium to high levels of self-efficacy were more likely to understand how math could help them in the real world and apply what they were learning beyond the classroom.

Internationally, there have been numerous studies related to mathematics self-efficacy. Sinanan (2022) looked at mathematics self-efficacy in Trinidad and Tobago and took a closer look at the age ranges of students and their achievement. Although this study found that there was no correlation between self-efficacy and predicted achievement, it states that "the younger students' more robust perception of mastery experiences can result from being at grade level. The older students may have been retained in previous grades or started later, indicating a learning issue" (p. 161). Therefore, the study suggests that students at a younger age are more likely to believe that they are able to do more complex math tasks, but it becomes more difficult for students to develop self-efficacy in math as they get older.

Student feelings of success are directly connected to math achievement, as found in a case study by Yıldız & Yetkin Özdemir (2019). In a case study of two students with

opposite levels of math achievement, the authors concluded that "successful experiences in mathematics are reflected positively in self-efficacy beliefs, whereas failures are reflected negatively; thus, both of them affect mathematics achievement" (p. 203).

Similarly, Cheema (2018) studies the connection between math literacy and math self-efficacy in Greece. In this study, the research suggested that there is a strong correlation between math literacy and factors such as "self-efficacy, availability of home educational resources, parental occupation status, school SES, school type, and student-teacher ratio" (p. 31). When these factors are positively involved in a students' educational experience, the research suggests that student feelings of self-efficacy and confidence in math literacy improves. The research recommended ways that schools can improve their students' self-efficacy and math literacy confidence. One suggested way was that school administrators should invest in resources, such as a workspace for homework or access to the internet, that support students who come from a lower socio-economic status to increase their math literacy. Following this suggestion would begin to close the math literacy gap and support students as they grow both their math literacy and their math self-efficacy.

Buehl (2011) discusses the cycle of students learning to read through a mathematical lens. In math classrooms, "texts" are often "textbooks" and "reading" normally means "re-reading". Buehl argues that linking math and literacy supports students as they develop academically because "students are least likely to read extended texts in mathematics; instead, they engage in very careful and analytical reading of precisely worded, conceptually deep sentences, which are illustrated and developed with examples, graphic displays, and mathematics notion" (p. 105). In reality, there are many

elements of math classes that include literacy skills such as vocabulary, making connections, and re-reading to comprehend.

According to Buehl, there are three types of domain specific knowledge that are present in math classes: factual knowledge, procedural knowledge, and conceptual knowledge. Factual knowledge is the understanding of basic math facts which enables students to do more advanced problems when they have this knowledge. Procedural knowledge is the understanding of problem solving steps that helps students solve these more complex problems with this understanding. Finally, conceptual knowledge is the understanding that math students have of the reason for using factual and procedural knowledge. Buehl states that conceptual knowledge is the area that is most prevalent when incorporating reading into mathematics because "students may endeavor to mimic the steps of an algorithm to solve designated problems without really internalizing why this is so" (p. 104). Supporting students in gaining conceptual knowledge helps them understand the reason behind their work in solving problems and is critical to developing math literacy.

After reviewing much of the research surrounding content area literacy and self-efficacy, it is clear that there is a large gap in research surrounding these topics with primary aged students. Specifically, there is a need for more research in the area of content area literacy and self-efficacy with primary aged students in the United States. Much of the research done in this area is with high school or college aged students, but content area literacy and self-efficacy can and should be addressed before students get to high school. This study attempts to bridge the gap in research to support teachers in helping their students understand and feel confident using content area literacy in the

classroom. Through continued research in this area, teachers will be able to support primary aged students in having a strong understanding of how to use content area literacy to better support their academic success in later years.

Chapter three discusses the school, teacher, and student context for the study. It also discusses the study's procedures and methods for data collection and analysis. Chapter Four discusses the results of the research and analyzes the themes that emerged from analysis of student observations, interviews, journals, and work samples. Chapter Five concludes the thesis by summarizing the study and discussing implications for future research.

Chapter 3

Research Design & Methodology

"Ever since kindergarten, I've been doing good at math."

- Ryan, grade 2

Introduction

The purpose of this chapter is to introduce the context and methodology of the study. This chapter includes information about qualitative teacher research and the rationale for this methodology. This chapter also includes information about the school and community context where the study was conducted, along with information about the class, teacher, and students who participated. Finally, this chapter outlines the overview of the study procedures, the self-efficacy lessons and the content area literacy skills that were taught as part of the study as well as data collection, and data analysis.

Qualitative Teacher Research Methodology

This study uses qualitative research through anecdotal notes, student work artifacts, and interviews. Specifically, this study uses qualitative teacher research. Qualitative teacher research best fits this study because it allows for researchers to be actively involved in the data collection in their classrooms as they are teaching (Klehr, 2012). Teacher research is "systemic, intentional inquiry by teachers about their own school and classroom work" (Lytle & Cochran-Smith, 1992, p. 450). Qualitative teacher research is research that is conducted in the classroom and builds upon what teachers already do in their classrooms. Qualitative teacher research involves being able to seek out and solve problems in education through inquiry and study (Shagoury & Power, 2012). After identifying a problem, teachers can conduct their research through a variety

of methods, such as journals, observations, interviews, student work samples, and discussions. Teacher research allows teachers to analyze problems in their professional environment. Lytle and Cochran-Smith (1992) explain that "teachers are concerned about the consequences of their actions, and teacher research is often prompted by teachers' desires to know more about the dynamic interplay of classroom events" (p. 466). Therefore, this style of research is best suited for this study because it allows teachers to ask and answer questions in their own classrooms to influence the educational research community.

Qualitative teacher research will be used for this study because the data collection methods include surveys, student work samples, student response journals, teacher observations, and student interviews. In this study, the qualitative data will be collected and cross-analyzed to look for patterns and connections between student self-efficacy and content area literacy.

Study Context

This study was conducted at Jacobs Elementary School (school name has been changed). Jacobs Elementary School is a preschool through second grade school in Springfield, NJ (town name has been changed). This study was conducted in a second grade classroom. The school is one of three in the district.

At Jacobs Elementary School, there were 539 students in the 2021-22 school year. 43% of the students were female and 57% were male. 18.2% of students were economically disadvantaged and .6% of students were homeless. 18.4% of students were classified and .4% of the students were Emergent Bilingual students. 77.7% of students were white, 11.1% were Hispanic, and 5.8% were Black or African American. Preschool,

kindergarten, and first grade students stay with the same teacher all day, and second grade classes are departmentalized by subject. Students switch classes for ELA/Social Studies and Math/Science. Students switch classes for ninety minutes daily.

When looking closer at the totals for third grade students taking both the ELA and math standardized tests, it is clear that there is a stark contrast between the scores on both assessments. Students in the district excel more in math and there are more struggling students in ELA. I am curious whether the students in the district feel more confident in their abilities to solve math problems compared to their abilities to read, comprehend, and write. These scores suggest a need for additional support for younger students learning the foundational skills of reading and writing.

Teacher and Students

This study will be conducted in my second grade classroom. This is my sixth year teaching and I have taught kindergarten through second grade. This is my first full year teaching in this current school district. In my school, I receive support from various school and district level coaches. I primarily receive support from the district math coach who works with all math teachers in the district to successfully implement the curriculum and differentiate instruction for all students. At various points throughout the year, I also work with my school's ELA coach, specifically when doing projects that require students to use both ELA and content area skills. For example, my students do a science writing project about animal research, so I work with the ELA coach to support my students in this implementation.

There are twenty one students in the second grade class. Twelve students are female and nine students are male. All students are between seven and eight years old

during the course of the study. 81% of the students are white, with 19% of students being two or more races, including Black, Hispanic, Asian, and American Indian.

Seven of the twenty one students receive basic skills support for ELA. Five of those seven students are in Tier 3 support where they work with the reading specialist for four of the five days in a week. Two of the seven students are in Tier 2 support where they work with a basic skills teacher for three days of the week. Five students receive basic skills support for math. All students are in Tier 2 of the intervention process. The students receive this support based on their initial i-Ready diagnostic taken in the beginning of the school year. Additional testing for ELA includes curriculum based assessments and the DIBELS assessment. Additional testing for math includes curriculum based assessments and an individual math interview.

Study Procedure

The study will take place during the character education block. This is a twenty minute block that takes place two days every week. During this time, students will learn skills to support their self-efficacy and practice these skills with peer and teacher support. The skills that will be taught during this time are: positive self-talk, goal setting, modifying goals, resilience, and overcoming challenges. The skills that are taught during the character education block will be reinforced throughout the day in all other subjects. For example, after learning about positive self-talk, students will be encouraged to use positive self-talk when discussing a challenging book they read in ELA, when approaching a math quiz, or when making self-portraits in art. Additionally, content area literacy skills will be taught during math lessons. These skills are: teaching students to read mathematically, writing and solving numberless word problems, questioning and

discussion around curiosity, and explicit vocabulary instruction. With the exception of numberless word problems, these skills will be incorporated into the existing math curriculum and used to supplement students' literacy instruction. All students will be participating in the lessons, but data will only be collected for students who have parental permission.

Prior to the study beginning, permission slips will be sent to all twenty one families in the second grade class. After permission slips are received, students will take the initial pre-assessment survey. This survey will ask their attitudes about their abilities as a reader and a mathematician. The survey will ask their feelings and attitudes towards reading and math and will be used to assess growth throughout the study. It will also help determine differences between student attitudes and confidence levels in the two subjects, which can lead to discussions with students about those feelings. These initial responses will give insight into their thoughts prior to beginning of the study and help create focus groups for the remainder of the lessons. The focus groups will be student discussion groups. Throughout the unit, there will be times where students will discuss their thoughts about self-efficacy and content area literacy with me, while there will be other times where students will talk within their focus groups about their thoughts.

A majority of the instruction will be self-efficacy lessons. During the first week of instruction, students will learn about positive self-talk. The second week of lessons will focus on goal setting. The third week will be a discussion about revising goals and how it is okay to change. During the third week, students will take the same survey again to check in on their progress. The fourth week will focus on self-reflection. Finally, in the

fifth week, the students will learn ways to overcome challenges. In the final week, students will take the same survey for the final time.

Each self-efficacy lesson will include a read aloud, discussion, and independent practice. See the table below for an overview of the self-efficacy lessons. During the first lesson, students will develop definitions for vocabulary words used throughout the unit: confidence, motivation, self-talk, and self-efficacy. In subsequent lessons, students will review and continue to develop these definitions as they learn and practice these skills more. During read alouds, students will have focus questions displayed to guide their thinking related to the skill. Following the read aloud, students will engage in a discussion with partners and the class about the skill. Students will complete independent practice during each lesson. For most lessons, there will be a practice page. All lessons will have a journal response following the lesson. More detailed lesson plans can be found in the appendix.

Table 1

Overview of Self-Efficacy Lessons

Lesson	**Topic**	**Read Aloud**	**Journal Prompt**
1	Positive Self-Talk	*My Magical Words* by Becky Cummings	How do you use positive self-talk?
2	Goal Setting	*Jabari Jumps* by Gaia Cornwall	What is your goal?
3	Modifying Goals	*Jabari Tries* by Gaia Cornwall	How will you meet your goal/new goal?
4	Resilience	*Ish* by Peter H. Reynolds	How are you resilient?
5	Overcoming Challenges	*The Girl Who Never Made Mistakes* by Mark Pett and Gary Rubinsten	What are you confident that you can do?

After each survey and whole group lessons, students will have discussions in their focus groups. These groups were created based on their responses to the initial survey and their personalities. Student personalities were considered so no one student dominates the focus group discussion and students feel comfortable sharing with the people in their groups. It is understood that not all students will be outspoken about their feelings in small groups, so individual discussions will be held as needed.

In addition to the self-efficacy lessons, content area literacy skills will be taught in both math and science. These skills will include helping students to "read mathematically" (Buehl, 2011), learning to solve numberless word problems, questioning and discussions surrounding curiosity based on math and science problems, and explicit vocabulary instruction of content specific words. Reading mathematically is essential to content area literacy, as Buehl (2011) says

> "Students are least likely to read extended texts in mathematics; instead, they engage in very careful and analytical reading of precisely worded, conceptually deep sentences, which are illustrated and developed with examples, graphic displays, and mathematics notion. Such sentences have to be deconstructed, as readers verbalize their understandings of concepts from the past as they work out the logic of the new slice of mathematics knowledge" (p. 105).

This shows the importance of understanding and comprehending mathematical texts. The math curriculum used in my school is Ready Classroom Math. This program uses a procedure they call "The Three Reads" for most problems. During this procedure, the students hear the problem read aloud by the teacher first, then one student reads it aloud, and then the class reads the problem together. They answer three questions after each read. First, they answer the question "what is the problem about?". Next, they answer "what are we trying to find out?". Finally, they answer "what information is important?". While this procedure is helpful, going beyond it supports students' understanding of the problem and the necessary vocabulary.

In addition to these three reads, my students and I often take time to discuss and visualize the problem. For example, when solving a problem about soccer balls and

footballs in gym class, I encourage my students to close their eyes and imagine the gym with the listed number of soccer balls and the listed number of footballs. My students and I often take time to discuss the vocabulary and how they see these words. For example, when presented with a problem about recycling, we had a discussion about the meaning of the word recycling, what materials can be recycled, what materials cannot be recycled, and their experiences with recycling. These extra steps help students to comprehend what the problem is asking beyond just the words and numbers on the page.

Numberless word problems will be taught in small groups. Numberless word problems require students to focus on the language of a word problem instead of focusing on the numbers and immediately solving the problem. Students will be shown examples of numberless word problems before creating and solving their own. Finally, students will take part in explicit and repeated vocabulary instruction in both math and science lessons to improve their content area literacy. Students are already familiar with learning vocabulary words and creating their own definitions from ELA class. However, these skills are very infrequently translated into both math and science curriculums. To solidify students' understanding of the mathematical terms, they will be repeated throughout the lesson so drawn upon frequently. Using this foundation, students will define essential vocabulary in both math and science. Students will use visual support in their development of these definitions and will be encouraged to use curiosity to explore more about these words and compare them with words they already know.

Data Collection & Plan for Data Analysis

Data will be collected through anecdotal observation notes. During the self-efficacy lessons, student responses will be recorded, along with any instances of self-efficacy related behaviors displayed in other subject areas throughout the week. Students will write journal responses related to the lesson of the week that will be used as data in the study. Additionally, teacher reflections will be used as a data source for determining the success of the lessons on both self-efficacy and content area literacy. The final form of data will be focus groups. During these groups, student responses and observational notes will be written down.

Following the five self-efficacy lessons, data will be analyzed. Data that will be analyzed will include: student surveys, work samples, student journals, and anecdotal notes. I will look for changes throughout the study to show a change in student self-efficacy. In my analysis, I will look for common themes in student data and responses that show a connection between self-efficacy and content area literacy.

Chapter four discusses the major themes found as data is analyzed and triangulated. It presents the findings of the study. It discusses the student work samples, journal responses, and my teacher research journal, as well as the themes that emerge as these data sources are cross-analyzed. Chapter five presents summary and conclusions of the study. It discusses the implications for practice as well as suggestions for future research studies.

Chapter 4

Data Analysis

"It's fun - and I like to do reading with math together"

-*Sam, grade 2*

Introduction

Chapter four focuses on the data collected during the six weeks of the study in an attempt to answer the question "When using efficacious content area literacy practices in math, how do students perceive and improve their confidence and motivation?" During the course of the study, data was collected through anecdotal notes, teacher research journal entries, student journals, and student attitude surveys. In this chapter, key themes will be reported. These themes were discovered through looking across all data sources and determining recurring ideas. These themes include: a) changes in attitudes surrounding confidence in math literacy; b) real world applications of math and literacy; c) the importance of numberless word problems; d) goal setting, positivity, and confidence, and e) my own experiences with self-efficacy and math literacy.

Changes in Attitudes Surrounding Confidence in Math Literacy

The first theme I observed when cross-analyzing my data was the changes in attitudes that my students showed with their overall confidence in math literacy. To start the study, students completed a survey as a pre-assessment. Students filled in a two sided survey: one side focused on their feelings about themselves as a reader and one side focused on their feelings about themselves as a mathematician. Each side had seven questions and students colored in a smiley face if they agreed with the statement, a "in the middle face" (mouth in a straight line) if they had a neutral reaction, or a frowning

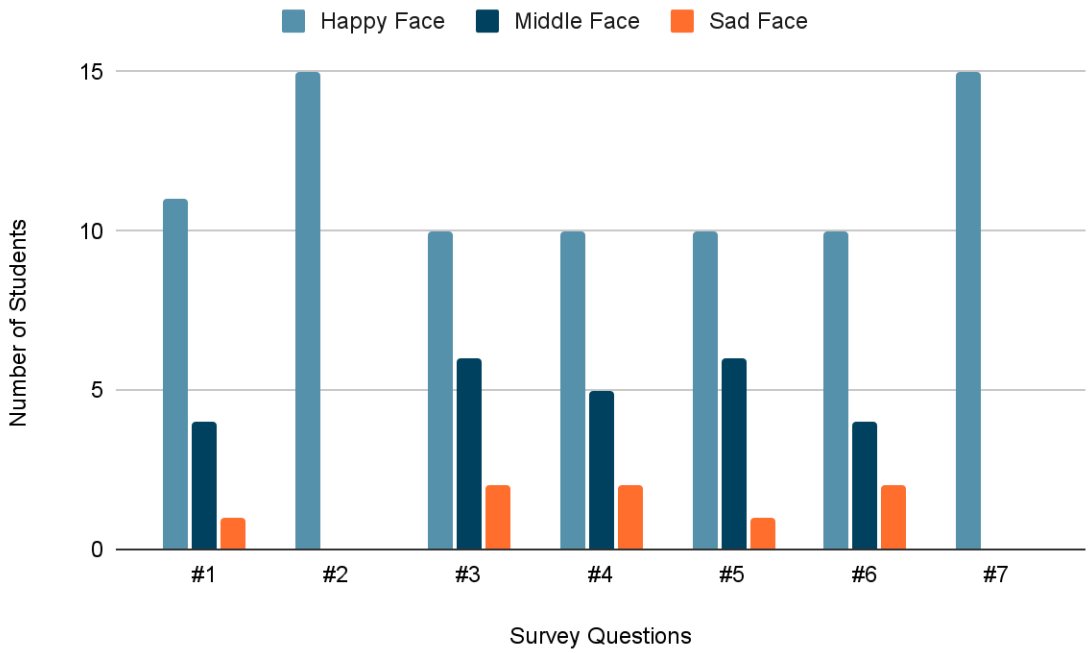
face if they disagreed. I explained to my students that we were going to be looking at their confidence levels and how to improve them, so I needed to know their honest and current feelings to help them improve. I explained to the class that they would be doing this survey again two more times in the next few weeks to help me see if their confidence levels are changing.

The questions on the math literacy survey were as follows:

1. I know that I will do well in math this year.
2. I think math is important.
3. I am better at math than my friends.
4. I can read math problems and understand what they want me to solve.
5. If my teacher asked me to read a math problem, I could do it.
6. If my teacher asked me to write a story to go with a math problem, I could do it.
7. Math is helpful at school and outside of school.

Figure 1

Initial Survey: Math Literacy Self-Efficacy

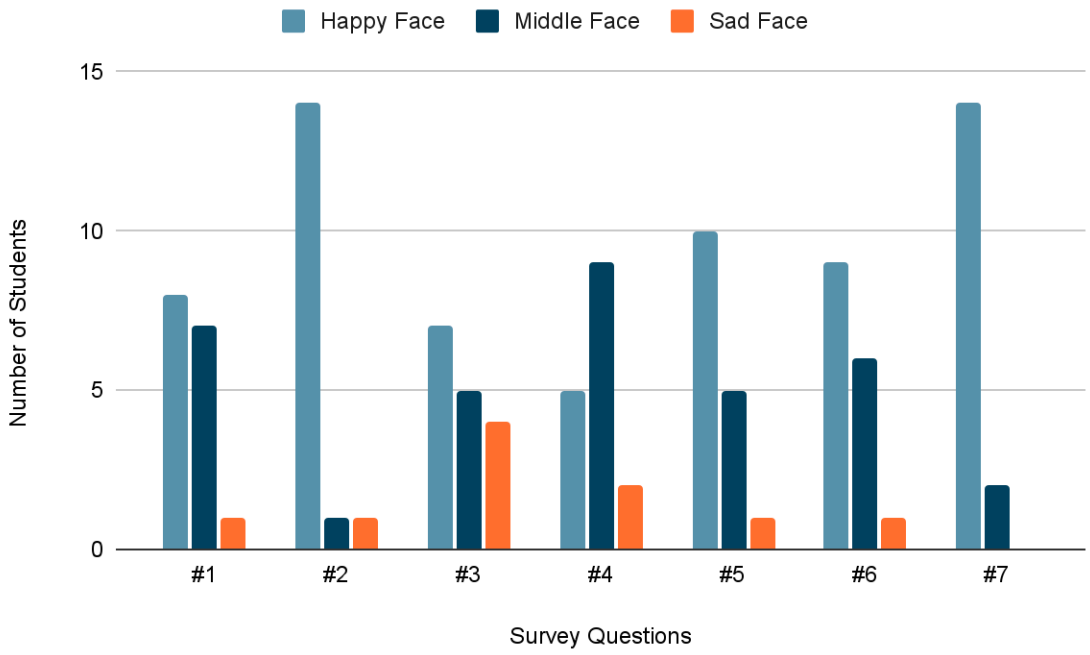


The questions on the reading survey were as follows:

1. I know that I will do well in reading this year.
2. I think reading is important.
3. I am better at reading than my friends.
4. I can read books and understand them.
5. If my teacher asked me to read a book, I could do it.
6. If my teacher asked me to write my own book, I could do it.
7. Reading is helpful at school and outside of school.

Figure 2

Initial Survey: Reading Self-Efficacy



For the initial survey, I noted that a few students showed some confusion, which led me to clarify the meaning of some questions. I recorded in my teacher journal "I also made sure to explain that it was their own opinion, not their grades. So I wanted them to tell me if they think they are better at reading than their friends, not if they get better grades in reading than their friends. I think those clarifications were necessary and helpful" (journal entry November 6, 2023). As my students completed the surveys three times throughout the study, I found that they needed less clarification. I was able to look across surveys for 16 students based on their attendance and completion of at least two surveys.

During the first survey, I observed that quite a few students were confident in their answers and quickly responded, while others were a bit more indecisive. Some

students chose to color in half of each smiley face to show their lack of confidence in one answer. One student, Bob (name has been changed), went back and forth, verbally discussing his thoughts to himself, and even erased an answer to completely change it.

When we got to the third question which asked the students to share if they think they are better at reading than their friends, Paul said that he would put himself in the middle because he "didn't want to brag".

Figure 3

Final Survey: Math Literacy Self-Efficacy

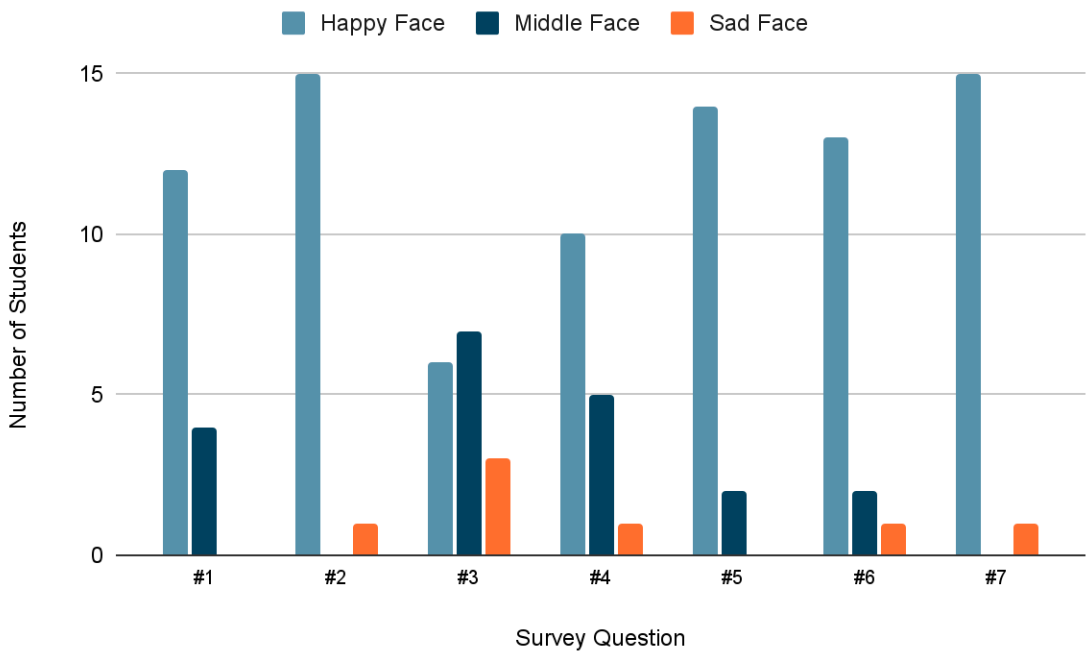
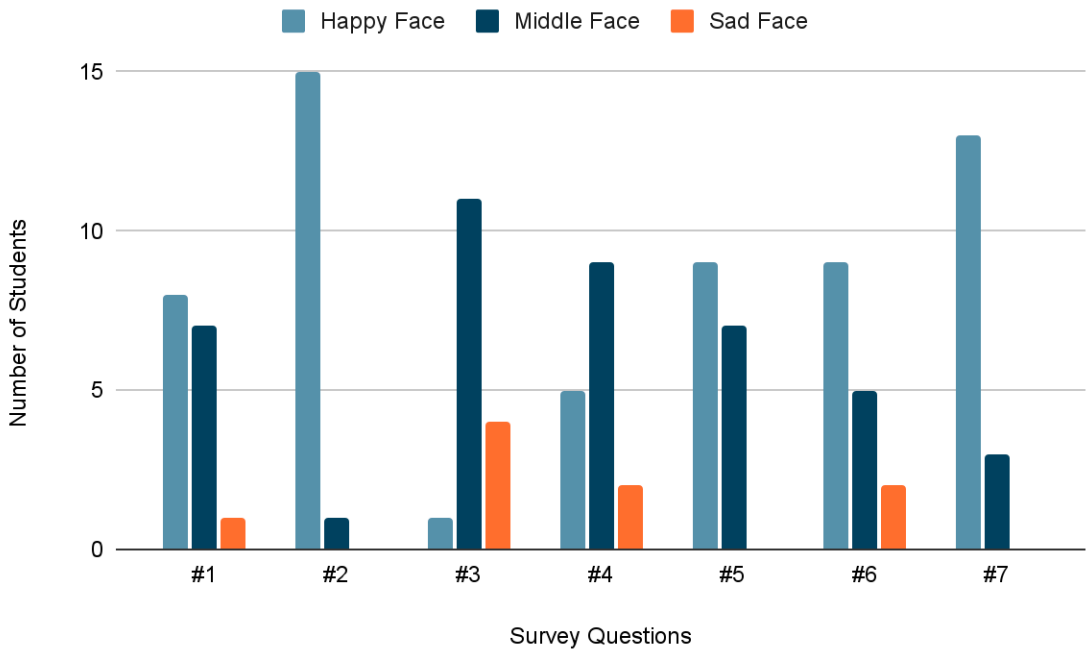


Figure 4

Final Survey: Reading Self-Efficacy



After all three self-assessment surveys were completed, I looked across the data to look for patterns and changes. Most students showed fluid changes throughout their survey responses. In the first survey, I noticed that 8 students gave themselves at least 6/7 smiley faces on the first survey, but their answers changed in the second and third ones. For example, in the first survey, Sam gave himself all smiley faces for his ability as a mathematician. However, by the third survey, he gave himself five smiley faces and a medium face for numbers three and four. In the second and third surveys, the data shows me that the students became more comfortable talking about their own confidence and self-efficacy, and I saw more changes in their responses because of this. They were able to articulate their thoughts more clearly and were more honest in their surveys. They also

saw through our conversations that I valued their honesty and we had more area to grow with their honest thoughts. They knew that they would not be penalized for their honest thoughts and I would not force them to talk about it if they didn't feel comfortable. It is clear to me that this positive relationship that we built helped my students be more honest in their responses.

Real World Applications of Math and Literacy

The second theme that I noticed was the value that my students placed on both math and literacy and their application to real life. In this section, I am referring to math as their abilities to solve math problems and literacy as reading and writing. Immediately upon looking at the surveys, I noticed one common thread that jumped out to me: my students responded positively to two of the questions on both the reading and math sides of the survey. The first question was number two: "I think math is important" and "I think reading is important". Every student said that they think reading is important and 15 out of 16 of students said that they think math is important. The second question that jumped out at me was number seven: "Reading is helpful at school and outside of school" and "math is helpful at school and outside of school". For both reading and math, 15 out of 16 of students colored in the smiley face to show their agreement with the statements. Regardless of their personal beliefs about their ability levels in both reading and math, it is clear through these statements that my students know the importance of math and reading, as well as the real world applications of both subjects in their lives.

In my conversations with students, their beliefs about the value of math and literacy were often tied with their feelings about the subject, but some were able to share why it is important to learn math and literacy.

Much of their conversation and writing surrounding the importance of literacy (reading and writing) focused on the ways that they would use it in their lives. Many of my students expressed interest in using reading and writing in their future careers:

Sam:	I want to be an author when I grow up, so I need to learn how to read and write.
Jess:	I want to be a singer, so I need to know how to read the words to my songs.
Ernie:	I want to be a YouTuber, so I need to be able to read the comments.
Elizabeth:	Miss McCabe, how do you use reading and writing?
Miss McCabe:	How do you all think I use reading and writing as an adult?
Russell:	You have to be able to read the math problems.
Caroline:	You have to be able to read your students' journals.
Cece:	You have to help me read books in the library.
Raegan:	I wrote in my journal that you have to be able to read and write because grown ups have to pay bills.
Ryan:	Grown ups have to use reading, writing, and math to pay bills.

Many of my students expressed the idea that continuing to learn about how to read and write will make them smarter. They made connections to our lessons about persistence and discussed how they should continue learning more about reading and writing so they can make their "brain stronger":

Aly:	I am learning how to read a nutcracker book and it has big words in it. It feels complicated. If I keep practicing those words and my mom and dad read it a lot, then it will be easier
Jess:	I would read a chapter book, but not if it's too hard. When it has bigger words, I can ask my parents or sound it out
Ryan:	My sisters help me a lot. The last test I did was progressing [a better grade] because I tried more than I usually did.
Winston:	I'm really good at reading. Me and my mom and (their ELA teacher) gives us papers that we have to read and me and her do it so I get really good at reading.

My students wrote in their journals to share their perspectives on the importance of math and literacy through their writing.

Figure 5

Ryan's Journal: Math in Daily Life

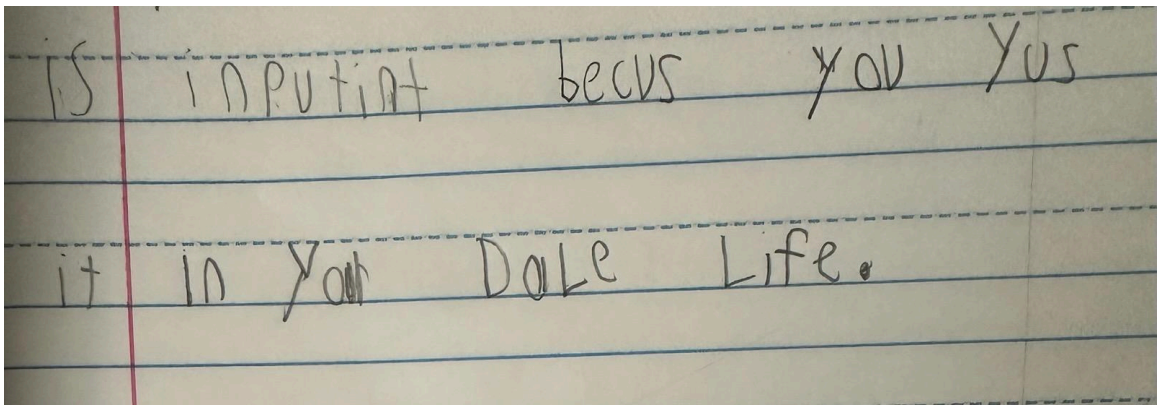
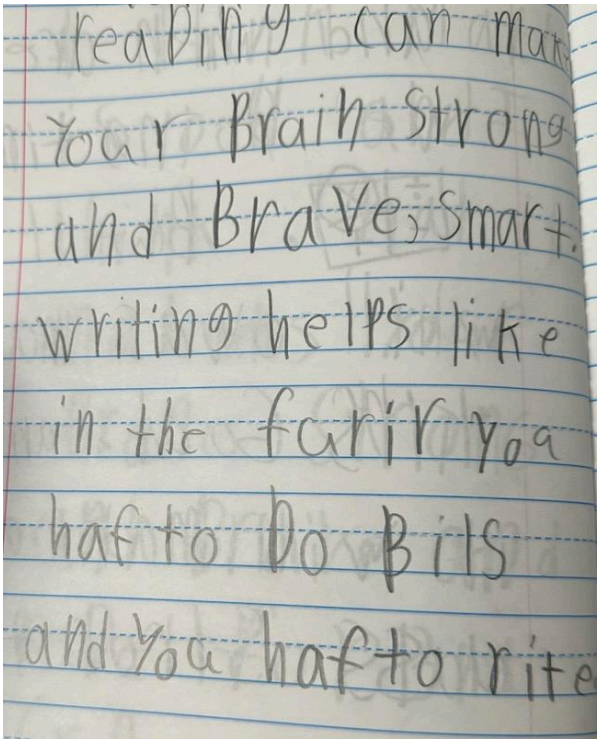


Figure 6

Raegan's Journal: Literacy in Daily Life



Beyond their journal writing, we had a class discussion about the importance of math in their daily lives. Here are examples from my students that show this:

Jess:	In first grade, we did a little test and there were different smarts. My smart was math so whenever we are taking a quiz in math, I usually get it right.
Dave & Aly:	Agreed that math is their favorite subject.
Dave:	I think math is important because that's where you learn pluses and minuses.
Miss McCabe:	Why do you need to know math?
Jess, Dave, & Aly:	You need to know math for money and adding and doing our math homework.

Later, in a small focus group discussion, Ernie and Winston related their love of math to their abilities by saying that they colored in smiley faces on the survey because they are good at math. Winston said “In first grade, I was really, really good at math”. Ernie said “ever since kindergarten I’ve been doing good at math”.

One of the ways that my students showed their value of math in the real world was through a discussion of practical applications of math. Ozgen (2013) researched the connection between real world applications of math and self efficacy by saying: “Given that self-efficacy beliefs are influenced by experiences, it is highly important to make

mathematics more concrete that is connecting it to the real world as much as possible in order to develop high school students' ML [math literacy] self-efficacy beliefs" (p. 312). Although this study focused on elementary students, the importance of real world connections for math is still the same. I asked my class a simple question: Why is math important? They wrote their responses in their journals that they used to guide a class discussion following their writing time.

Students' journal responses and discussions support the finding that math has value in the adult world. The following quotes from several students demonstrates this well:

Cece:	Math is important because you might have a job that needs a lot of math.
Elizabeth:	You could be a teacher
Russell:	You could be a mathematician.
Ryan:	I don't know the name, but some jobs use measurement.
Raegan:	You could be in the Olympics for the fastest math writer.
Nick:	I think math is used on battleships, too.
Dave:	Does a shoe maker need to do math? Because of the length? And you need to know how big the shoe is?
Ernie:	Pilots use a lot of math.

Dave: Sometimes, if you're really close [to landing a plane], you need to know how many more feet or yards you need to go.

Cece: My mom is an accountant and she does a lot of math.

Ryan: Can you be an accountant for a gym?

After discussing the many jobs that involve math, I asked the class to share other reasons they had written down that math is important.

Jess: Math is important because you are going to need it in the future if someone asks you a question.

Miss McCabe: What kind of questions might you be asked?

Jess: They might be your little sister and they might not know what 1+1 is. I teach my sister.

Sam: You're going to need to learn about math because when you get money, you're gonna need to pay for a house and stuff. And also, if you don't know money, you can't buy things.

Elizabeth: The kitchen set for Fun Friday is actually a calculator.

Figure 7

Ryan's Journal: Counting Money

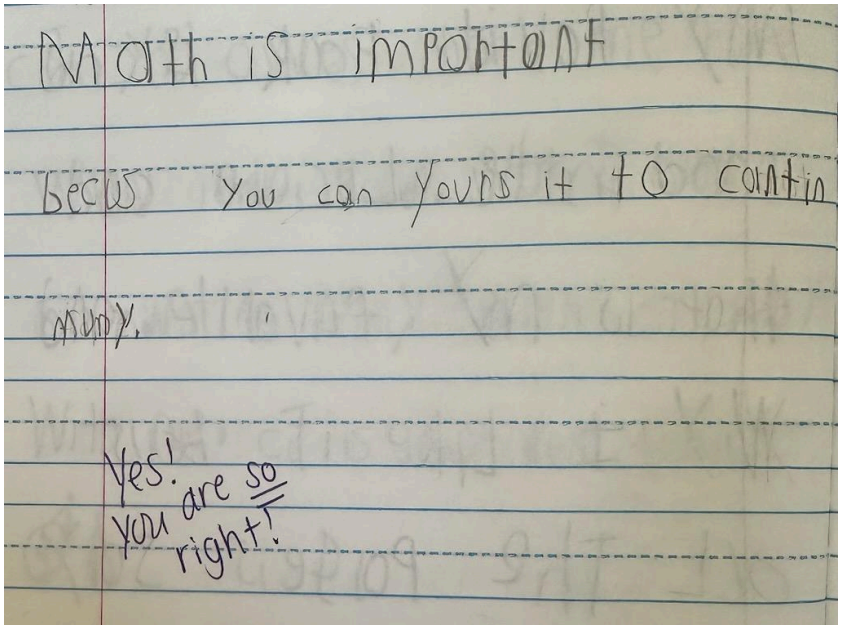


Figure 8

Ernie's Journal: Importance of Math

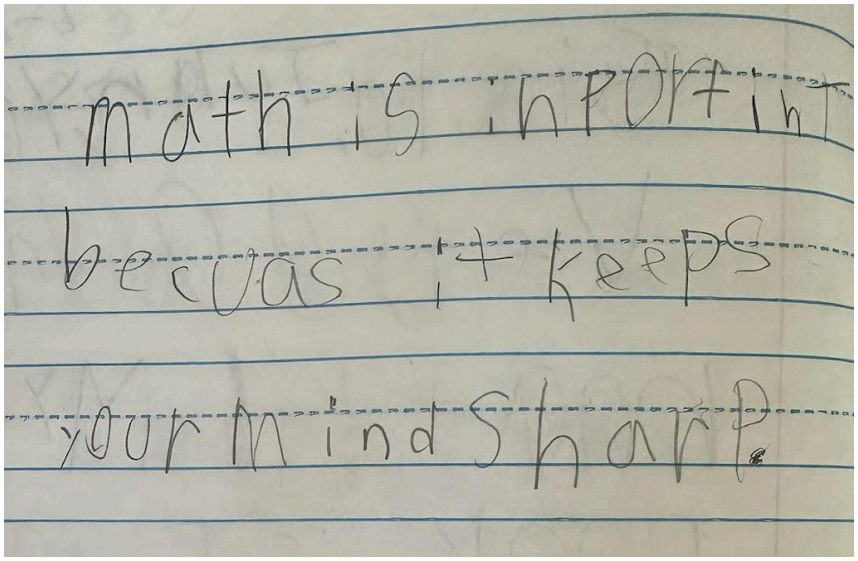
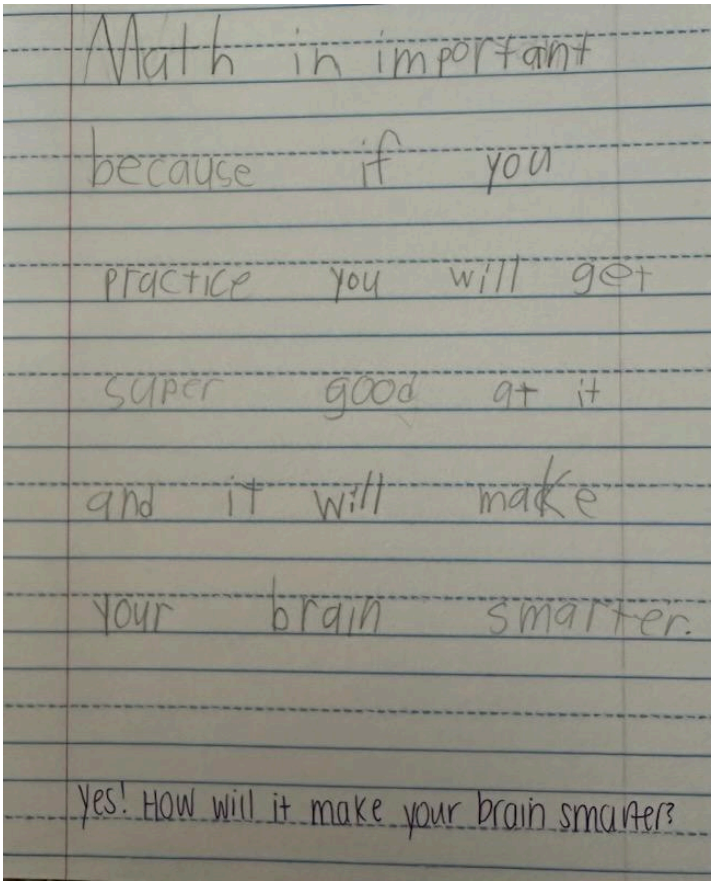


Figure 9

Caroline's Journal: Perseverance



Their journal responses, conversations, and survey responses show their understanding that math has value beyond the classroom. It shows the importance they place on learning math and learning how to do it well, so they can apply it to the real world. Students being able to connect math to the real world is an essential skill for self-efficacy, as students have to see that math can help them beyond the classroom (Ozgen, 2013). This was an unexpected finding for me when I was analyzing my data, but it shows the reason that my students have such strong confidence in their math abilities. They know that they need to learn it and be able to apply it.

The Importance of Numberless Word Problems

The next theme that will be discussed is the importance of numberless word problems. One of the conundrums that inspired my research was my students' struggle with reading and comprehending word problems in math. Word problems require students to use a math language that helps them know how to solve a problem, and without the competence in reading mathematically, solving word problems is a challenge for students. Buehl (2011) shares that reading mathematically is the idea of reading through a mathematical lens and that it is often a challenge for students, especially with comprehension. He argues that "for the majority of readers, one trip through a math sentence, and certainly a math page, will not result in satisfactory comprehension" (p. 63). In my personal experience, I often have students who read a word problem once, look for the two numbers, and add them together. Then, if I suggest that they should check their work, they go back and subtract. This shows a lack of understanding of mathematical language that is essential for solving problems.

To address this concern, I led small group lessons on numberless word problems. Numberless word problems are problems with all numbers removed and replaced with words. Students have to read and comprehend the words as mathematical terms instead of focusing on the numbers and guessing on the operation (*1. What are they? – Numberless Word Problems)*. Here is an example of a numberless word problem, broken apart into the different steps that are used to show students the progression of the problem:

Step 1: Millie has some cookies. Then, she gets some more.

Step 2: Millie has some cookies. Then, she gets 6 more.

Step 3: Millie has some cookies. Then, she gets 6 more. Now, she has 13 cookies.

Step 4: Millie has some cookies. Then, she gets 6 more. Now, she has 13 cookies. How many cookies did Millie have at the start?

It was my goal that through this experience with numberless word problems, my students would focus on the language of the problem instead of focusing solely on the operation. Atkins (2021) says "The key to helping students make sense of problems and persevere in solving them is to develop the language of mathematics in all that we do" (p. 130). Using the sample problem above, students can use visuals or create mental images to imagine the different number options that could work in the problem before the numbers are introduced. In addition, students practice mathematical language and would need to recognize that because the word "some" is used at the start of the problem, we don't know the first addend. They can also focus on how the problem evolves and their own mathematical thinking changes as more facts are introduced into the problem. I used numberless word problems in this series of small group lessons to help students see the importance of math vocabulary in their problems and learn to comprehend problems for what they were asking instead of just looking at the numbers.

In my lesson, we started with a sample numberless word problem that we solved as a group. I used a "join" problem from the Numberless Word Problems website as the sample. The sample included discussion topics that I followed with my groups. The problem started as follows: There are some mice playing in a field. Some more mice come and start playing, too.

We read the problem together and I asked each group to visualize the problem and tell me more about what they see in their heads. Most students did not tell me a number of mice, instead focusing on a size. Raegan told me that she saw a lot of mice in a field

with grass. Bob told me that he saw mice with cheese. A few students focused on the lack of numbers, but were quickly able to change gears to focus on imagining the mice in their heads. After reading the initial problem, I moved into the second step and erased the first word “some” and changed it to 16. I asked the students to tell me about how this changes the image they see. Ernie said that he didn’t see 16 mice at first, but now he sees them.

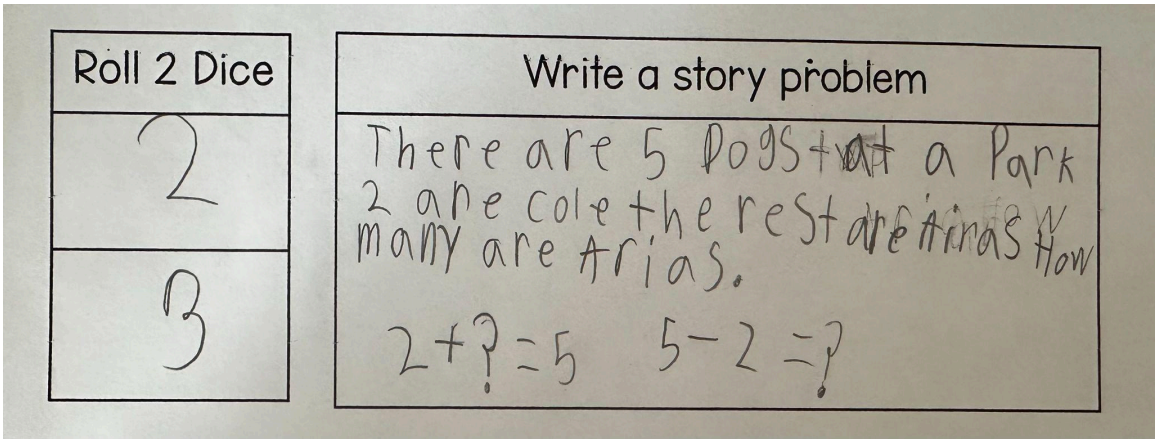
From there, we brainstormed various numbers that the second word “some” could be. Russell and Paul were discussing why the second word some could or could not be a three digit number, like 100. Russell thought that it could be 100 because “the word ‘some’ could mean any number”, but Paul thought that it didn’t make sense with the first number being 16. After their discussions, I revealed the second number as 8, which thrilled Dave, since that was his guess. Finally, we discussed the question that should go at the end. I was surprised that this part came so naturally for my class because they were all able to figure out that it was an addition problem and come up with a question to ask the reader to add. Their discussions throughout the numberless word problems led directly into their understanding of mathematical language.

After the sample, I showed the students a word problem that I wrote using the same format. Then, they independently wrote two of their own story problems after rolling two dice. I told them that they could choose the operation, but that the language they used in their problem had to match their operation. We also discussed the many ways that they could ask a question for the person solving their problem. We discussed that their question has to clearly let their reader know what they have to do and also use math language to clue them into the operation. They loved this activity and were so excited to use their friends and family members' names in their problems.

When writing their own problem, Nick and Raegan were the only two students who wanted to write a matching equation, but I told them that it wasn't necessary because we weren't going to solve the problems. Their instant need to write the equation to match and focus on the numbers showed that they haven't had much experience with using word problems without numbers before and they are very reliant on the numbers to help them solve problems. They need more support with using language in math instead of numbers.

Figure 10

Raegan's Numberless Word Problem



One of the main elements of the numberless word problems was identifying the operation that students would be doing if they were solving the problem. When I gave my students the instructions for them to write their own story problems, I told them that their language and question had to match their operation. Jess rolled the numbers 6 and 5. She wrote "Santa has 6 ornaments. He gives some to Mrs. Claus. Now he has 5". She got stuck on the question. I asked her to tell me how she knew that she wrote a subtraction

problem and she pointed to the words “gives some”. I prompted her to think about a question that would show that the reader is looking for the difference. After a few tries, she wrote “How many ornaments does he give to Mrs. Claus”.

Figure 11

Jess’ Numberless Word Problem

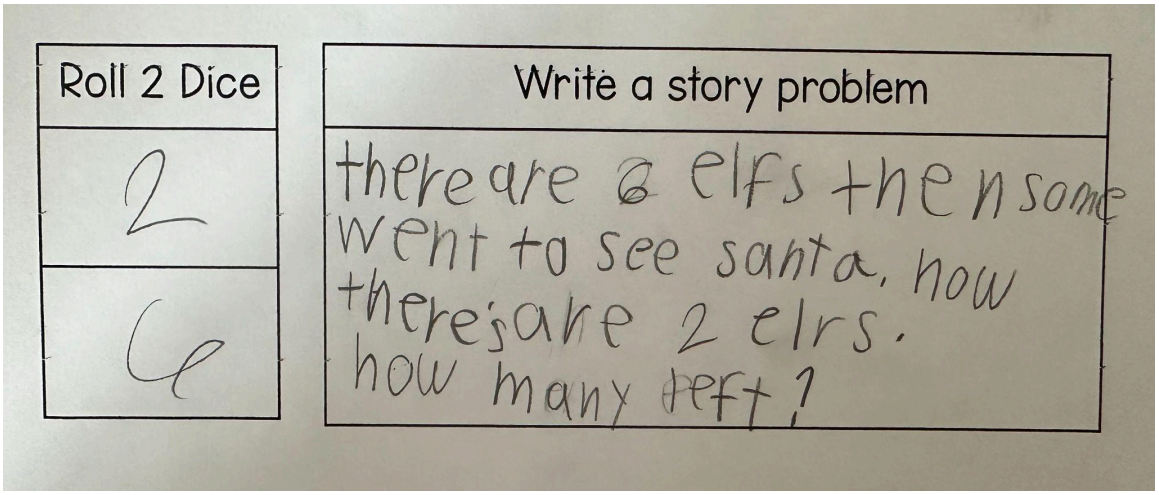
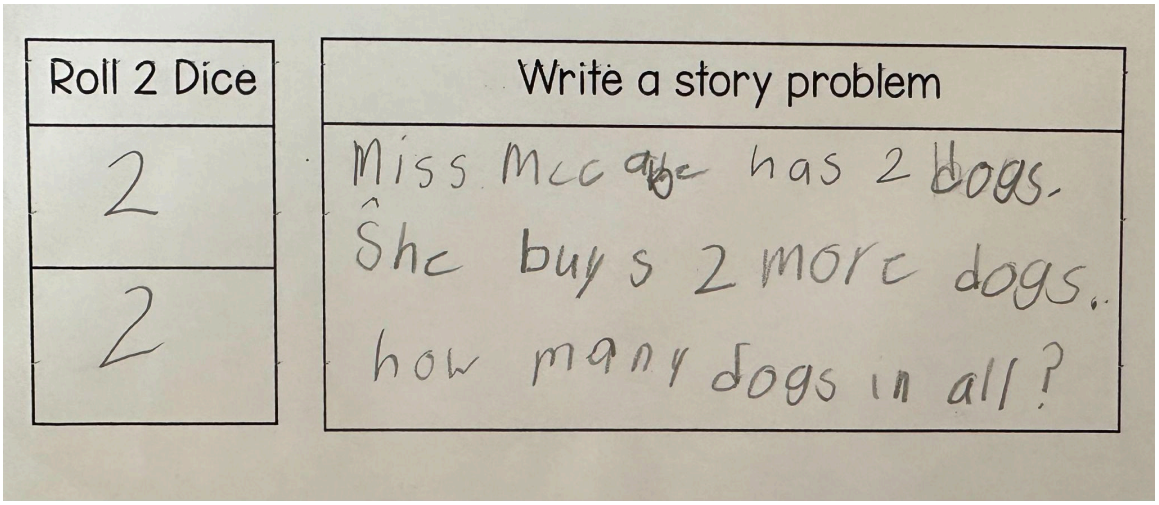


Figure 12

Aly’s Numberless Word Problem



To assess their overall feelings of self-efficacy in using this mathematical literacy skill, I looked to their final surveys. In looking at my students' surveys, the data showed that numberless word problems positively impacted my students' math literacy confidence. On the survey, question #6 asked "If my teacher asked me to write a story to go with a math problem, I could do it". In the initial survey, ten students gave this question a happy face, four students gave it a middle face, and two students gave it a sad face. In the final survey, thirteen students gave this question a happy face, two students gave it a middle face, and one student gave it a sad face. The data from my student surveys shows that their confidence in using mathematical language to create story problems increased due to the lessons on using numberless word problems.

After analyzing the data, my students' discussions surrounding numberless word problems, independent work samples, and survey responses show their increased level of confidence in using mathematical language through the use of numberless word problems. As Atkins (2021) writes, students need to develop language fluency to help students as they continue to learn mathematical concepts. Using numberless word problems supported my students in their development of mathematical language.

Goal Setting, Positivity, and Confidence

Another theme that was prevalent in my data was my students' understanding of goal setting in relation to their confidence. During the six weeks of the study, I conducted whole group lessons related to self-efficacy: positive self-talk, goal setting, revising goals, building resilience and self-reflection, and overcoming challenges and emotional regulation. During each of these lessons, my students and I discussed their changing understanding of important terms like confidence, motivation, self-efficacy, and

resilience. Additionally, these lessons gave them practice with each of these skills with peers and time to reflect in their journals.

Data suggests that the most impactful lesson during the self-efficacy unit was the second lesson in the unit: goal setting. My students participated in an interactive read aloud of *Jabari Jumps* by Gaia Cornwall to see how Jabari sets a goal to jump off the high dive and he works to meet it. Throughout the story, we stopped to discuss Jabari's goal and the steps he is taking to jump off the high dive. In my teacher journal, I wrote "After we read, we had a discussion about Jabari's self-efficacy. My class was split evenly with students who thought he would jump again versus students who thought he would not jump again" (teacher journal November 13, 2023).

After reading about Jabari meeting his goals, I challenged them to make at least one academic goal and one goal for something outside of school. During this lesson, I saw my students create goals, but also support and build each other up. Here are some examples of goals my students developed:

Figure 13

Cece's Academic Goal

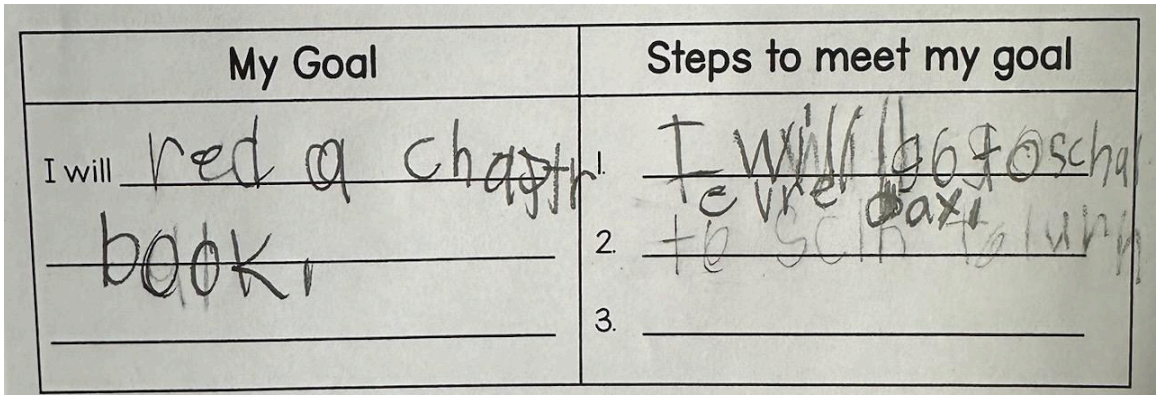


Figure 14

Sam's Hockey Goal

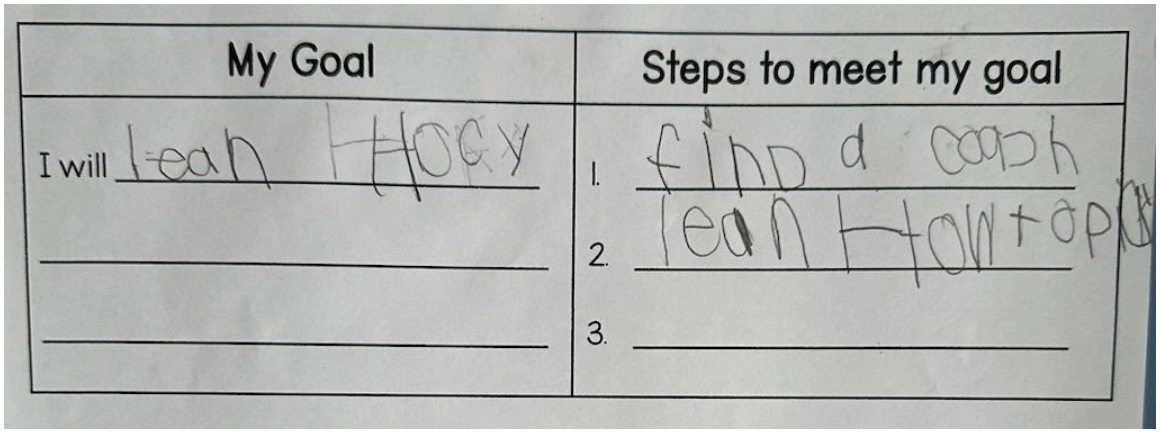


Figure 15

Aly's Student of the Month Goal

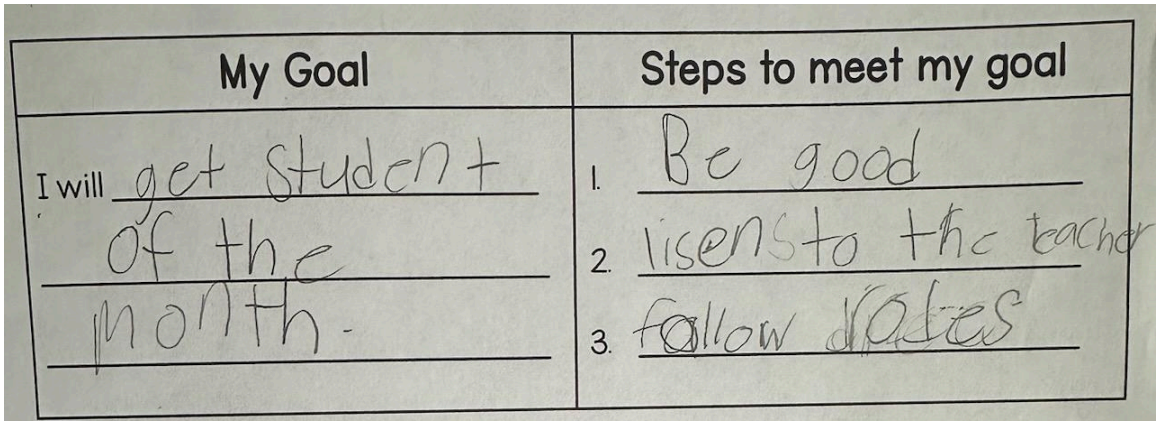


Figure 16

Jess' Gymnastics Goal

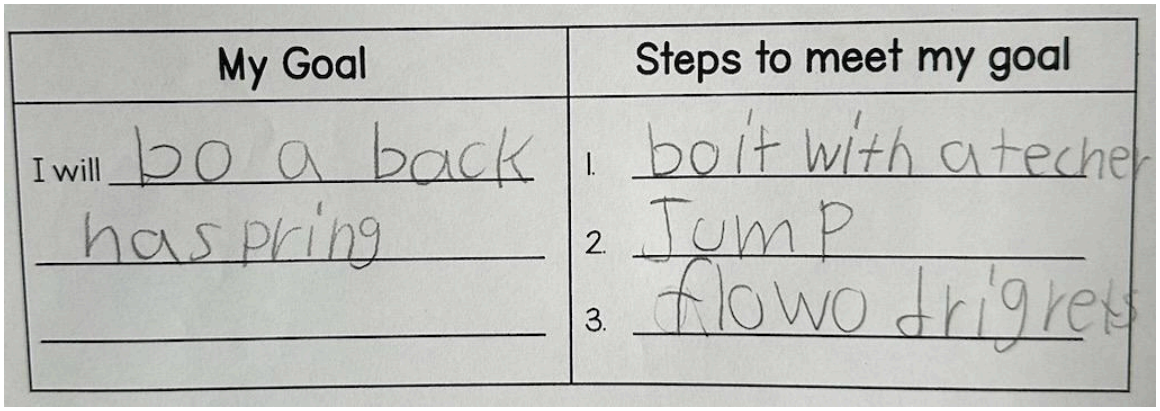
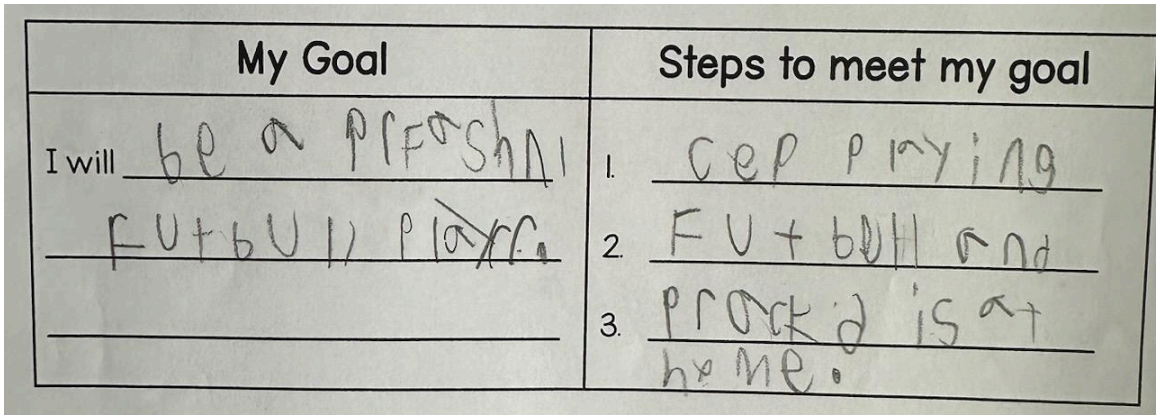


Figure 17

Ernie's Football Goal



Dave's confidence visibly improved when I told him that I thought his goal was awesome. I could tell because his whole face lit up and he smiled at me. I discussed this change with him and let him know that I was proud of him, but I could also tell that he was proud of himself. Nick was hard on himself as he worked on his goals. When I

collected their goal sheets, he said to me “I didn’t get that far”, but Robby was sitting next to him and quickly jumped in to say “that’s fine, you did your best!”.

Following the whole group lesson, students wrote about their goals in their journals. They were asked to write their goal and why they chose it. Although they developed three goals during the lesson, I asked them to choose the one goal that they were going to focus on first.

Figure 18

Robby’s Journal: Student of the Month

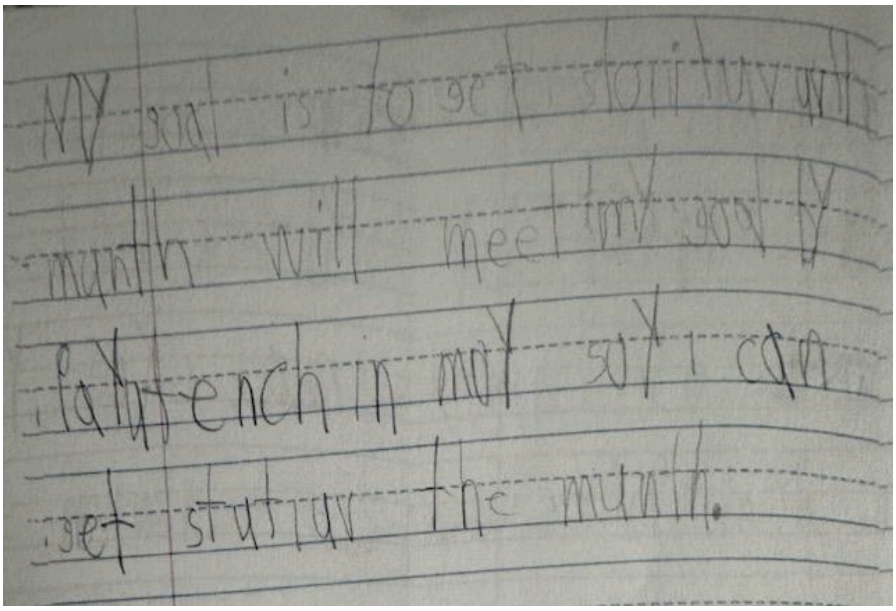


Figure 19

Ruth's Journal: Gymnastics

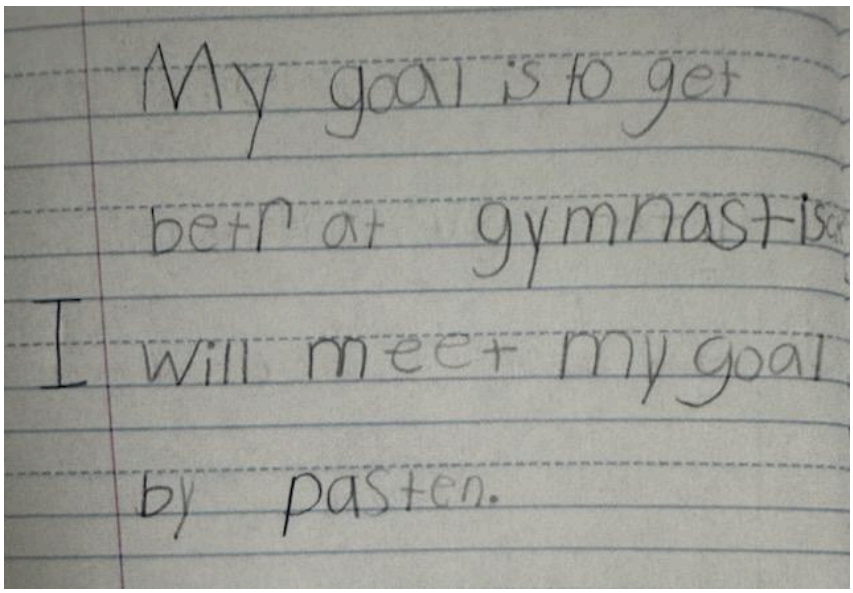
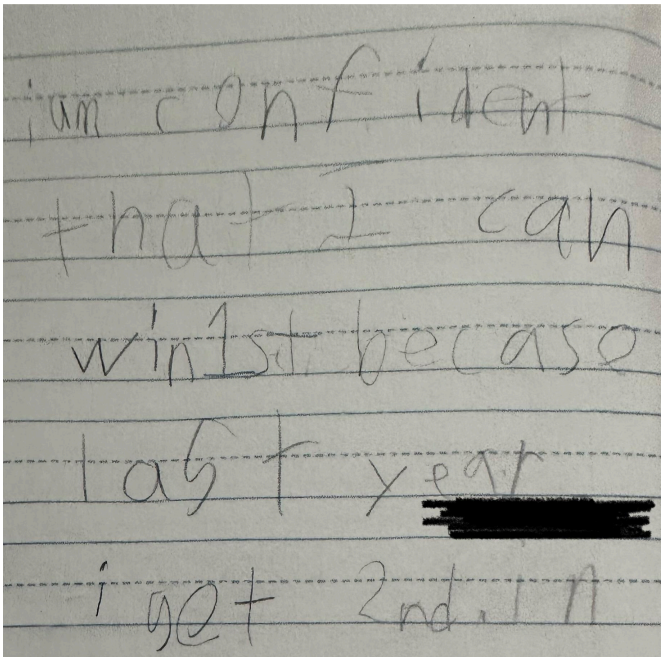


Figure 20

Ernie's Journal: Wrestling



During this lesson, we read the second book in the *Jabari Jumps* series, *Jabari Tries*. Throughout our reading, I asked my students various questions to get them thinking about Jabari's goals and his self-efficacy. Our discussion included:

Bob:	Jabari's goal is to make a flying machine.
Miss McCabe:	Does Jabari have self-efficacy?
Ruth:	Yes. He already did it and he knows he can do it again.
Robby:	Yup!

Following our read aloud, we discussed our goals and whether they would change after thinking about them throughout the week. They brought their journals from the previous lesson to look back at their goals. First, they turned and talked to each other about their goal and worked with their partner to decide if they wanted to keep their goal the same or if they wanted to change it.

Jess:	My goal was to be a singer by listening to songs. Now, I am going to sing more than I listen to songs.
Caroline:	That's a great idea. You can sing along with the songs you listen to.
Ernie:	My goal was to dig a big hole and find gold. My new goal is to just dig a big hole so I can jump in and scare my sister.

Dave: At least he knew he wanted to change his goal.

Winston: He probably wouldn't find gold anyway…

Although Dave and Winston recognized that both Ernie's original goal was a little unrealistic, they chose to support him and help Ernie continue to develop confidence in himself. Observing this kind of friendship, positive self-talk, and confidence boosting between my students was one of the many ways that the lessons on self-efficacy have positively shaped my students.

Following this lesson, my students wrote in their journals to discuss their goals changing. Many students, like Ruth, kept their goals the same.

Figure 21

Ruth's Journal: Revising Goals

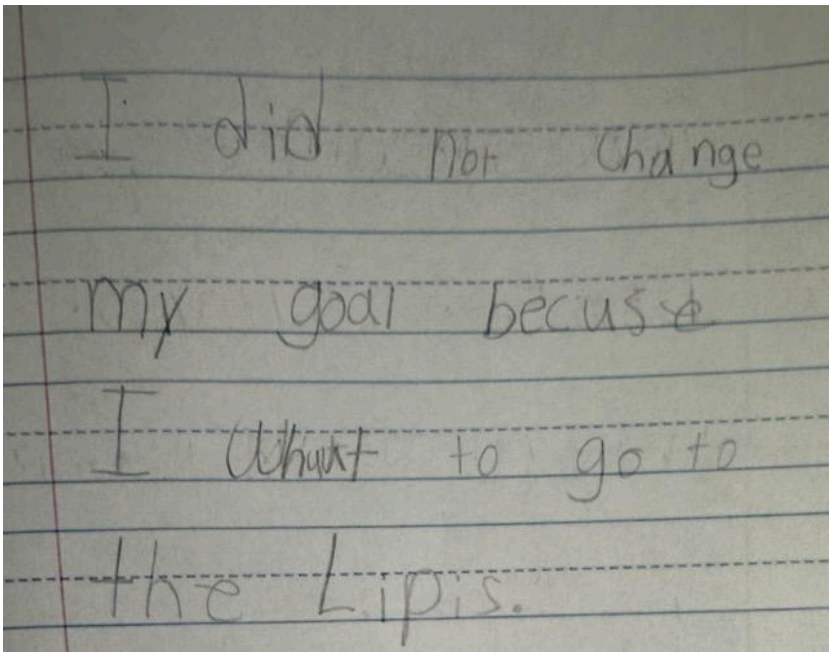


Figure 22

Caroline's Journal: Gymnastics

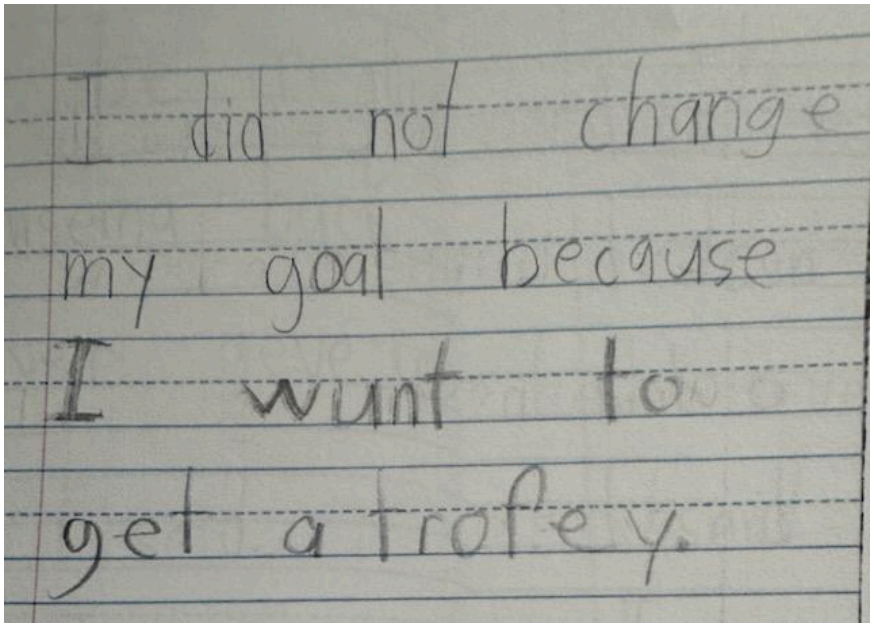
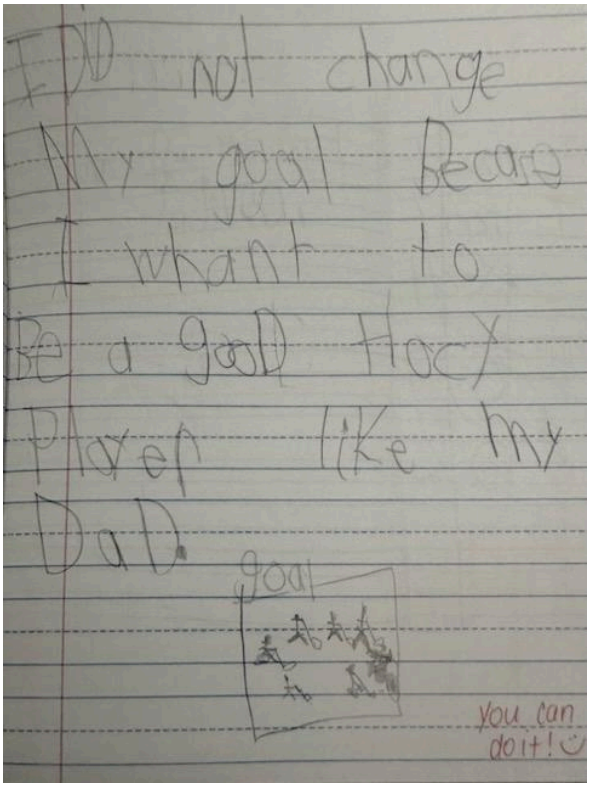


Figure 23

Sam's Journal: Hockey



Seeing how my students took the lessons on confidence, self-efficacy, positive self-talk, and goal setting and applied them to their lives every day was powerful. They were more willing to have conversations with me and each other regarding their feelings of confidence, or sometimes a lack of confidence. But when they expressed those feelings, they always had others behind them ready to support them and build them back up. As a teacher, it is always shared that you should build a classroom community. I think that these lessons helped my students and I build a stronger classroom community. One where they were not afraid to talk about their mistakes and where they knew that had support.

My Own Experiences With Self-Efficacy and Math Literacy

The final theme was related to my own experiences with self-efficacy and math literacy. In analyzing my data, I noticed changes while teaching about self-efficacy and math literacy. As I worked through the lessons in my unit and taught more math literacy and content area literacy skills, I evaluated my own self-efficacy through entries in my teacher journal. Watching my own self-efficacy grow through the confidence I was developing in teaching these lessons was unexpected. I had researched teacher self-efficacy and found journal articles that stated the importance of teacher self-efficacy, but I didn't think it would apply to my own experiences in my classroom. As I looked through my teacher journal, I found that I wrote more about my own confidence than I realized and was surprised to see my own confidence grow.

I recorded my initial confidence level in my teacher journal after the first lesson when I said, "I was so nervous to teach this first lesson! I was very worried about making sure that I was teaching it as I had planned it, but also collecting enough data throughout the lesson. I was nervous for no reason, because I think it went very well" (journal entry November 6, 2023).

When I taught my students about numberless word problems, I also recorded my own lack of confidence in teaching my first small group "I was very nervous again to do this lesson. I have taught students how to do word problems in small groups before, but I was very nervous to do this one. Maybe it was knowing that I was going to be collecting and analyzing data on it, but I could tell that my voice was shaky during this lesson, especially in the beginning" (journal entry November 30, 2023). Although I had taught

this skill before, my own lack of confidence in teaching this group was evident in my first lesson.

For the second small group lesson, I noted that I had less nerves. I continued to record my own self-efficacy and noticed my own confidence continued to grow. By the third lesson, I wrote “I definitely felt that it was easier and I was better able to answer student questions, since it was the third time that I had taught this lesson” (journal entry December 4, 2023).

Self-efficacy is the idea that people will choose a task that they feel confident they can do. It is obvious that after my first journal entries for this study, I did not feel confidence in what I was teaching. After teaching them and recording my own responses and seeing student responses, I feel that I would teach them again. I believe that the lessons on numberless word problems proved especially important for my students, especially considering their growth on their self-evaluation.

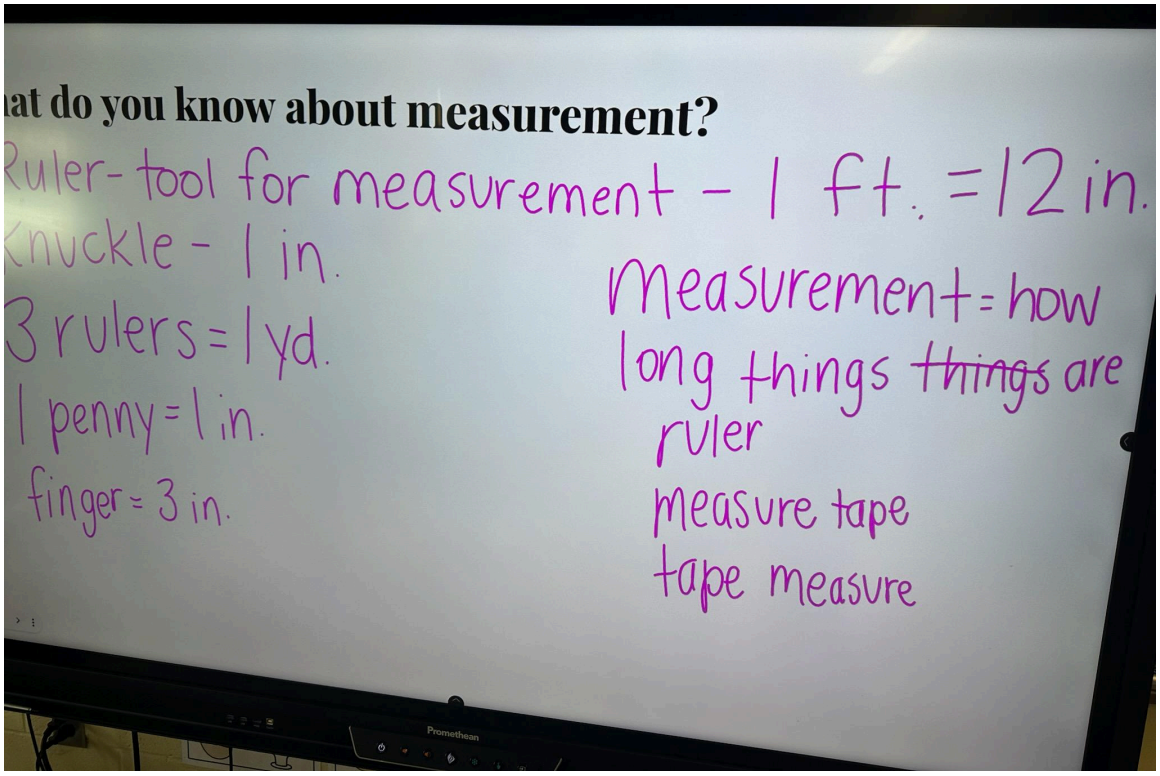
In terms of math literacy, I noticed a huge improvement in my students’ learning with improved emphasis on math literacy. One way that I emphasized math literacy beyond the curriculum was improving our vocabulary discussions. Our curriculum simply lists the vocabulary words, so that was how I taught them as I adjusted to this program. However, I noticed that many students could not retain the meanings of these words. For example, one of the first vocabulary words I taught this year was “sum” - the answer in an addition problem. In December, I still had students who asked what they had to do to find the “sum”. This was a concerning realization for me as I learned that I should be extending my vocabulary instruction beyond just introducing the words on the first day of the lesson and moving on.

During this unit, I began the procedure of reviewing vocabulary daily as a start to our lesson. Our conversations still included the typical discussion of the word and its meaning; however it went beyond that. During the initial conversation, I made time to ask my students what they already know about the topic. In turn, this led to more discussions about the practical application of the vocabulary. Buehl (2011) says that mathematical vocabulary usage is different from regular vocabulary usage because students have to understand the multiple uses of regular words in daily conversation versus in math class. Part of our discussions usually included the multiple ways that my students have heard a specific word in their daily lives.

On later days in the lesson and into the following lessons, we highlighted specific words that we had already learned that would be relevant to the lesson that day. While my students still asked questions about words that we had learned earlier in the year before we started this practice, their questions related to new words dwindled and showed that they had a better understanding of these terms.

Figure 24

Measurement Knowledge



In my own experience, I definitely want to continue this practice of extended vocabulary instruction beyond my time conducting this study. I felt that my students had a better understanding of the terms that they were using and they were able to use those terms in their conversations with each other surrounding math. I enjoyed feeling like my students were creating the learning and leading discussions based on their own experiences with the vocabulary terms. Atkins (2021) said that teachers shouldn't be the answer key and that the students in your class can read facial expressions to know whether to look to the teacher for the answer. By eliminating the idea that I am the

answer key, my students got to engage with the vocabulary more by sharing their own knowledge of the word and how they understand it throughout our daily discussions.

One way that I increased my students' experiences with math literacy was through more exposure to math texts. I spent time sorting through the math books that had been shared with me by my district math coach before categorizing them to fit in with the content that I teach. Each month, I change the books in my classroom library display to include various seasonal and holiday books. While conducting my study, I also began changing the math related books that were in the library so students can explore books related to the content we were currently learning or had already learned. When we learned about how to tell time, I included *Fancy Nancy: Tell the Time!* on our display shelf. My students loved the interactive hands on the clock and how they could match the clock to the text. Cece loved reading it during inside recess and asking me to tell her a time so she could make it on the clock.

Another way that I included literacy into our math content was through dedicated math read alouds. After sorting through the math books I had, I was surprised to see so many read aloud options that would allow my students to extend their conversations about math. These texts often allowed students to think about the topics that we were learning about by making their own connections. For example, before learning about measurement, we read the book *How Big is a Foot?* as our introduction to units of measurement. While my students thought it was a funny story and had no idea how there was a time before beds were invented, they quickly grasped the idea that the units of measurement between the king and the apprentice were different. One more reason that I loved doing these read alouds was that it gave my students repeated exposure to the

vocabulary words that they needed to know. Reading *How Big is a Foot?* gave them practice using the term "unit of measurement". As we continued on in our measurement unit, my students often hear me ask them to include the unit that they used to measure or to check their units when measuring in inches or centimeters. This read aloud helped them visualize the language that was so important to their learning about measurement.

In my experience, I know that these practices that I began as part of my study are standard content area literacy practices. However, math literacy is a subject that is not frequently addressed with content area teachers. Topics such as building math language, including read alouds, and vocabulary instruction should be standard discussions in math professional development. I have seen the improvement in my students as a result of these practices becoming part of our daily routine, and I will continue to use them for the remainder of this school year. I am excited to start using them from the beginning of the year next year to give my students a solid foundation for math literacy.

Conclusion

Following this chapter, chapter five concludes the study by restating conclusions and providing implications from the study for future educators. Finally, suggestions for future research are presented.

Chapter 5

Summary, Conclusions, & Limitations of the Study

"I am confident that I can do anything."

-Raegan, grade 2

Chapter 5 summarizes the findings of the study to answer the question "When using efficacious content area literacy practices in math, how do students perceive and improve their confidence and motivation?" The chapter also shares conclusions based on the findings and discusses implications and suggestions for future researchers.

Summary of the Findings

This study was conducted to answer the question "When using efficacious content area literacy practices in math, how do students perceive and improve their confidence and motivation?" To conduct the research, second grade students at Jacobs Elementary School (name has been changed) in New Jersey participated in the study through classroom observations, student surveys, journal responses, work samples, and small group and whole group discussions. In addition, a teacher research journal was used to document the progress of the study and observe my own self-efficacy as a teacher. After analyzing the data, the findings suggest that using math literacy practices with students improved their perception of their own self-efficacy, confidence, and motivation. The findings also suggest that when students are explicitly taught lessons focusing on self-efficacy skills, the students have a better understanding and are more likely to discuss their honest feelings of self-efficacy with their peers and teachers. Through cross analyzation of the data, students' understanding of their own self-efficacy improved in using math literacy skills as a result of this study.

Conclusions of the Study

This study was developed based on my own curiosity about how students can build their confidence as readers and writers. In my graduate coursework, I developed an interest in content area literacy and wanted to explore more in this field and learn more practical applications about how to improve my students' content area literacy knowledge. In my new position as a math and science teacher, I see students struggling with confidence differently than when I taught ELA subjects. To learn about how to combine these two areas, I researched self-efficacy, confidence and motivation, as well as studies focusing on math literacy.

The research conducted in this study suggests that when students are able to think about their own self-efficacy, they become more aware of their own confidence levels and their motivation for completing certain tasks. This is based on Bandura's theory of self-efficacy (1977) where people naturally choose tasks that they feel they can accomplish. When my students were initially questioned about why they wanted to do a specific task, their answers were vague or unknown. However, as the study continued, their motivations became more clear and they understood more about why they were choosing to do specific tasks. They were quick to point out examples of self-efficacy in their own learning and in their environment. For example, as my students learned about number lines in subtraction, I showed the class ways that they could use the number line to add or subtract and pointed out that I prefer to add because it makes more sense to me. Jess raised her hand to say "choosing the one that's easier is self-efficacy because you are picking the one that's easier to do". The other students contributed to this conversation by sharing which one they believed was easier and which operation they were likely to use.

The data sources for this study were developed based on research conducted on ways to measure self-efficacy. Self-rating scales were used for students to share their own thoughts about self-efficacy and literacy throughout the course of the study. Wigfield & Guthrie (1997) used rating scales to observe students' beliefs about their motivation to read and Wilson & Trainin (2007) used rating scales to measure student self-efficacy in literacy (reading, writing, and language). This study supported the importance of rating scales as final analysis showed student growth in multiple areas, most notably in my students' confidence levels as writers in math.

Another data source that was important for my students was their journal responses. My students recorded their thoughts following each self-efficacy lesson in their journal and I was able to give them feedback if they wanted it. Sigmon (2019) shared that students using journals and having opportunities to share their learning with their teacher increases their feelings of self-efficacy and shows students that their teacher cares about their learning.

Finally, I recorded notes as the student progressed in both my observation journal and my teacher research journal. The teacher research journal proved essential in observing my own self-efficacy changes, especially as I learned more about teaching math literacy to my students. The International Literacy Association's (ILA) 2020 "What's Hot in Literacy Report" found that 91% of teachers believe that their primary responsibility is teaching students content area literacy to apply to other subject areas. Conversely, 30% of teachers said they need more support with content area literacy. Therefore, documenting my own self-efficacy change across the study through my teacher research journal was helpful in seeing areas that I can improve and continue to

improve my own confidence. I found that with increased practice, my confidence grew as I taught the skills and I felt better prepared to answer my students' questions to help them feel confident in using math literacy.

To teach students more about math literacy, numberless word problems were used in this study. Students had opportunities to explore numberless word problems in a small group before writing their own word problem. Although there is a lack of research conducted on primary aged students with math literacy and self-efficacy, Sinanan (2022) found that students can develop math self-efficacy at a younger age when they are more likely to develop confidence in doing complex math tasks, but it becomes more challenging as children get older. My study also suggests that giving students opportunities to practice math literacy skills at a younger age and providing them positive feedback through their journals and discussions helps develop their self-efficacy in using math literacy so they can continue to grow and learn in the future.

Implications of the Study

Because this study showed a positive impact on student perception of their own self-efficacy in using math literacy skills, it can provide insights for other educators in any grade to improve their own math literacy practices. Student understanding of math literacy skills increased during and following this study. These math literacy skills are essential for students in primary grades as they continue to learn math in upper elementary, middle, and high school grades. Additionally, this study provided students with opportunities to learn and discuss new terms such as self-efficacy, motivation, confidence, and resilience. Giving students exposure to these terms, discussing them, and practicing them with peers allows students to think metacognitively about their own

learning. This also creates opportunities for teachers to get to know their students better as people and as learners.

Beyond the six weeks that I conducted my study, I have continued to see my students positively support each other and build their confidence. I attribute this to the positive culture we created as a result of the study. During a warm up game in math, the students were divided into two teams and had to identify the total number based on base ten blocks. It was Nick's turn and I asked him if he was ready. He quickly said no and shook his head to solidify how much he didn't feel confident. Before I had time to reply, Jess, Caroline, and Paul were telling him that he can do it and building his confidence back up. As I watched, Nick started to stand up straighter and smiled at his friends. When it quieted down, I asked him if he was ready and he said yes.

During a review lesson on counting money, Russell was having a hard time counting the coins pictured on his card. He said that he was stupid. Aly, Raegan, and Paul were in a group with him and they all looked shocked when he said this. They told him that it wasn't nice to say that to himself and told him that he can do it. During centers, Dave was not happy that the dice weren't rolling the numbers he wanted. He put his head down and said "I can't do this". Ryan and Ernie were in his group and Ryan shook his head while Ernie said "I can't do this YET". Seeing my students continue to apply what we have learned far beyond the six weeks of the study has shown me that these discussions, skills, and experiences are so important to my students' development academically and socially.

My biggest takeaway from this study was the findings from the self-efficacy lessons. They created a more positive classroom culture where my students felt

comfortable talking about their confidence or lack thereof. It created a space where my students supported each other and knew that they could also look to me to build them up and remind them of their abilities. Seeing my students start to remind each other of their potential was such a bright spot in our classroom. After completing the study, I feel that my practices as a teacher have been positively shaped by this experience. I am looking forward to using what I have learned for the remainder of this school year and using it from the start of each future school year. It is my hope that my own self-efficacy continues to grow so I can help more students feel confident in their abilities.

In terms of math literacy, I am so glad that I began these practices this year. I am confident that it will have even more of a positive influence on my future students when I take what I have learned and apply it from the start of the year. However, content area literacy and math literacy are such broad topics that I feel that I have only scratched the surface. It is an area where I want to continue to learn and look for more ways to share this knowledge with my colleagues. The topic of math literacy was a challenging one to tackle in just six weeks and I feel that I have so much more to learn. It is my hope that I can continue to learn more about math literacy and implement it strongly from the beginning of the year for future students.

Limitations of the Study

The first limitation of the study was the makeup of the class. All twenty one second grade students had the opportunity to participate. As explained in chapter three, the class has twelve female students and nine male students. Additionally, 81% of the students are white and 19% of the students are two or more races, including Black, Hispanic, Asian, and American Indian. Most of my students have gone to the same

school since preschool or kindergarten, therefore, they have many shared educational experiences that helped them connect during our class discussions. Conversely, future research may yield different results with students with different backgrounds.

Another limitation was the time of year when the study was conducted. The study began in early November and concluded in mid December. Many of the math literacy skills that I was teaching my students would be better taught at the beginning of the year to build those math literacy foundations for our classroom early on. As shared in chapter four, some students really struggled when reading or writing numberless word problems because they wanted to focus only on the numbers instead of focusing on the language. Finally, another limitation of this study was that it was only conducted for six weeks. It was challenging to fully expose students to all the elements of math literacy. If students had more exposure to the idea of using language and vocabulary instead of numbers in word problems from the beginning of the year, this could have created a different outcome.

Suggestions for Future Research

This study was conducted with primary aged students in the United States, and based upon the previous research shared in chapter two, there is limited research on math literacy and self-efficacy with primary aged students in the United States. There is a larger body of research conducted on high school students. However, self-efficacy and math literacy should be taught to students before high school and there is a need for further research in these areas. These skills should be addressed with students before they get to high school because they are relevant to every area of their education. With further

research in this area, teachers could learn more strategies to be able to better support their students and set them up for continued academic success.

Finally, although math literacy and content area literacy as a whole were a main focus of this study, six weeks felt like only scratching the surface of these topics. With more time, teachers could learn more about how primary aged students perceive their abilities to use content area literacy or specifically math literacy. While this study was only conducted on math literacy, it could also be expanded to include literacies in other subjects throughout a students' day. Through the use of student surveys, this study compared student perceptions in traditional literacy subjects (reading and writing) with literacy in math. To take this idea a step further, future research could dive deeper into comparisons of student perceptions of self-efficacy in reading, writing, and math.

Final Thoughts

To conclude, giving students opportunities to use math literacy improved their perception of their own self-efficacy, confidence, and motivation. Additionally, having students become aware of their own self-efficacy, motivation, and confidence through intentional and explicit instruction provided deeper discussions beyond the six weeks of the study. Personally, this study opened my eyes to the many ways that I can teach students to include literacy (reading, writing and language) in other subjects beyond just reading and writing. It also created a stronger classroom culture between myself and my students where they felt safe talking about their lack of confidence, self-doubt, and challenges. Seeing my students build each other up with positive self-talk and motivation has been the best part of this experience and I know that I am going to continue to implement these lessons for future years to create the same positive classroom cultures.

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Appendix A

Self-Efficacy Student Self-Evaluation

Name: _____ Date: _____

Me as a Reader

1. I know that I will do well in reading this year. 
2. I think reading is important. 
3. I am better at reading than my friends. 
4. I can read books and understand them. 
5. If my teacher asked me to read a book, I could do it. 
6. If my teacher asked me to write my own book, I could do it. 
7. Reading is helpful at school and outside of school. 

Name: _____ Date: _____

Me as a Mathematician

1. I know that I will do well in math this year. 
2. I think math is important. 
3. I am better at math than my friends. 
4. I can read math problems and understand what they want me to solve. 
5. If my teacher asked me to read a math problem, I could do it. 
6. If my teacher asked me to write a story to go with a math problem, I could do it. 
7. Math is helpful at school and outside of school. 

Appendix B

Self-Efficacy Lesson Plans

Lesson 1 - Positive Self-Talk

Objective:

- SWBAT identify methods of positive self-talk.
- SWBAT explore how positive self-talk can increase their self-efficacy

Standards:

- RL.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- SL.2.4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

Procedure:

- The lesson will start with students listening to the Affirmation Song by Snoop Dogg on YouTube.
- Students will learn vocabulary terms: self-efficacy, confidence, self-talk, motivation. Students will discuss their familiarity with these terms and how they can use them. Students will develop definitions for the words with teacher support.
- Students will listen to the story My Magical Words by Becky Cummings
- Discuss: when was a time that you talked positively to yourself?
- Students will read scenario cards and turn and talk to share what positive self-talk they could use in the scenario.
    - Scenario #1: You are creating a self-portrait in art and you are having a hard time making it look like you.
    - Scenario #2: You are doing a math quiz and you don't remember how to do the problem.
    - Scenario #3: You are reading a book and you are reading it but it isn't making sense.
    - Scenario #4: You are playing a game and you don't win.
- Whole class debrief: how can positive self-talk increase your confidence as a student? When will you use it?

Journal Prompt: How do you use positive self-talk?

- Sentence starter: When I am doing something challenging, I say _____ to myself. This helps me because _____.

Lesson 2 - Goal Setting

Objective:

- SWBAT identify a character's goal in a text
- SWBAT Identify how goal setting can help you achieve new things.

Standards:

- RL.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
    - A. Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- SL.2.4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

Procedure:

- First, we will review the vocabulary words learned last week. To review, we will use definitions created by the class with teacher support.
- The lesson will begin with a read aloud: Jabari Jumps by Gaia Cornwall. While reading, students will answer the following questions:
    - What is Jabari's goal?
    - What steps is he taking to reach his goal?
    - How does Jabari reach his goal?
    - How does Jabari feel when he meets his goal? Do you think meeting his goal improved his self-efficacy?
- After reading, students will develop their own goals for improvement either in school or out of school.
    - First, they will identify how Jabari sets a goal and the steps he takes in the book.
    - Next, they will look at two teacher examples of goal setting. One goal will be for "in school improvement" (ex. Become more fluent at addition) and

another goal will be for “out of school improvement” (ex. Score more goals in soccer).
        - Teacher will reiterate that the steps to meet the goal do not have to be complicated.
        - After the examples, the class will discuss how they will feel after meeting their goal and if it will improve their self-efficacy.
- Students will work with a partner to develop and refine their goal on the goal setting worksheet. Students will write their goal meeting steps to support their goal.
    - To support student goal development, visual examples of goal categories will be displayed on the board. Goal categories may include: soccer, math, art, emotions, reading, listening, helping at home, student of the month.

Journal prompt: What is your goal?

- Sentence starter: My goal is to _____. I will reach my goal by _____.

Lesson 3 - Revising Goals

Objective:

- SWBAT Identify how revising goals can help you achieve new things.

Standards:

- RL.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
    - A. Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- SL.2.4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

Procedure:

- The lesson will begin by reading Jabari Tries by Gaia Cornwall.
- During the story, students will answer the following questions:
    - What is Jabari’s goal?
    - Does his goal change throughout the story?

    - How does his family help him meet his goal?
- After the story, they will look at their goals from the previous week. Students will write a reflection about their progress. During this reflection, students will identify if they need to revise their goal.
- Students will use their goal setting sheet from the former lesson and make any changes if they'd like to their goal.

Journal - How will you meet your goal/new goal?
I am going to meet my goal by _____. I will change my goal to _____ because _____.

Mid-Assessment - after lesson 3
Self-efficacy scales (self-assessment)

Lesson 4 - Building Resilience & Self-Reflection
Objective:
- SWBAT reflect on their goals and their progress.
- SWBAT define resilience

Standards:
- RL.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
    - A. Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- SL.2.4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

Procedure:
- Before the lesson, students will review the vocabulary words they have learned so far and their definitions, as developed during the first lesson.
- In addition to the vocabulary words they have been learning throughout the unit, we will learn a new word: resilience. Students will read a definition of resilience and discuss what they think it means.

        - Definition: the ability to bounce back after a challenging situation.
- We will read “Ish” by Peter H. Reynolds.
- As we read, we will answer these questions:
    - At the beginning, Ramon reflected on his art. What did he think?
    - Why did his feelings change?
    - Is Ramon resilient? Why or why not?
- After completing, students will turn and talk with their partners to discuss the following questions:
    - What is a time that you had to be resilient?
    - How are you going to be resilient in the future?

Journaling - How are you resilient?
I can be resilient by _____.

Lesson 5 - Overcoming Challenges & Emotional Regulation
Objective:
- SWBAT learn about the power of overcoming challenges
- SWBAT identify how to regulate their emotions to feel more confident

Standards:
- RL.2.1. Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
    - A. Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.2. Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- SL.2.4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

Procedure:
- This lesson will start by reviewing the vocabulary words that they have learned throughout this whole unit: confidence, motivation, self-talk, self-efficacy, and resilience.
- Next, the students will listen to the story The Girl Who Never Made Mistakes by Mark Pett and Gary Rubinstein.

- As they read, they will consider the following questions:
    - How does she feel in the beginning of the story?
    - How do her feelings change by the end?
    - How does she manage her emotions?
- After reading, students will turn and talk with their partners to discuss the following questions:
    - How does she feel at the beginning of the story? How does she feel at the end?
    - What could you do to regulate your emotions when you are feeling upset?
- Finally, students will complete a paper with steps to calm down. Students will read one of two scenarios and write the steps they would take to calm down.

Journaling - What are you confident that you can do?
I am confident that I can _____ because _____.