2016

Evaluation of a Goal Setting Intervention with Grades 3-5 Military Dependent Students Targeting Math Proficiency

Whitney DeSantis
Walden University

Walden University

COLLEGE OF EDUCATION

This is to certify that the doctoral study by

Whitney DeSantis

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Beth Robelia, Committee Chairperson, Education Faculty
Dr. Andrew Alexson, Committee Member, Education Faculty
Dr. Laura Onafowora, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
2016

Abstract

Evaluation of a Goal Setting Intervention with Grades 3-5 Military Dependent Students Targeting Math Proficiency

by

Whitney DeSantis

M.A., California State University San Marcos, 2000

B.A., San Diego State University, 1996

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

June 2016

Abstract

As military dependent students relocate, they enroll in multiple schools throughout their K-12 experience. Frequent mobility can create gaps in achievement. The challenge in the local setting is meeting the needs of military dependent students scoring below grade level standards in math. The purpose of the formative evaluation was to determine the effectiveness of the Personalized Education Plan (PEP) program and propose refinements. The conceptual framework included goal setting, motivation, engagement, and self-regulation. The concurrent multi-methods study included a central research question on whether a PEP increased student math scores. Questions about student motivation, engagement, self-regulation, and goal setting followed. Eighteen out of 30 teachers from 2 schools completed an online questionnaire about the PEP program and impact on students. Measures of Academic Performance (MAP) math scores were collected on all students. Quantitative data analysis included a paired samples *t* test which showed a statistically significant ($p < .001$) increase between math scores before and after implementation of the PEP. An independent samples *t* test showed military dependent student scores were slightly higher than for nonmilitary students, but not statistically significant ($p > .05$). Qualitative analysis of teacher questionnaire data revealed themes in student motivation, engagement, and self-regulation. Evaluation results recommended the district change the PEP program to support continued implementation. The findings contribute to social change by providing critical information that may assist other districts in creating effective goal setting programs for military dependent students.

Evaluation of a Goal Setting Intervention with Grade 3-5 Military Dependent Students Targeting Math Proficiency

by

Whitney DeSantis

M.A., California State University San Marcos, 2000

B.A., San Diego State University, 1996

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

June 2016

Dedication

My project is dedicated to all of the military families and dependent students who face a great deal of change in their lives throughout their educational journey due to one or both of their parents serving in the United States military. Stay strong, stay motivated, stay focused, and you will do great things.

Acknowledgments

For me, my doctoral journey has resulted in a myriad of emotions over the past four years. I would like to start with acknowledging my husband of over 31 years. I would not have completed this journey if it were not for him. He made countless delicious meals for me while I worked through the weekends. He continually checked in with me every few hours to see how I was doing and to ask if I needed anything. We put many trips and opportunities on hold to commit to my doctoral journey. Thank you, Robert, for coaching me and cheering me on throughout the four-year doctoral rollercoaster.

Thank you to my daughter, Jennifer, for proofreading and editing many of my papers and helping me keep my sense of humor. We spent many hours working on school assignments together. She was in her graduate program while I was in my post-graduate program. We commiserated together, laughed together, and took breaks to have mother-daughter time together.

Finally, I thank my mom who passed away of lung cancer on February 16, 2011. She always said I would be Dr. DeSantis someday when I did not even have my master's degree yet! I seriously thought she had lost her mind. She knew all along.

Table of Contents

Table of Contents i

List of Tables v

Section 1: The Problem 1

Definition of the Problem 6

Rationale 8

Evidence of the Problem at the Local Level 8

Evidence of the Problem from the Professional Literature 11

Definition of Terms 13

Significance 14

Research Questions 15

Review of the Literature 17

Conceptual Framework 18

Contemporary Literature 23

Summary 27

Implications 27

Summary 29

Section 2: The Methodology 31

Multi-Method Design and Approach 34

Setting and Sample 34

Permission 35

Data Collection Strategies 36
Role of the Researcher 37
Data Analysis 38
Instruments and Measures 44
Limitations 46
Findings 48
Research Question 1 51
Research Question 2 54
Research Question 3 55
Research Question 4 56
Research Question 5 58
Conclusion 64
Section 3: The Project 66
Description and Goals 67
Rationale 69
Review of the Literature 70
Math Misconceptions 71
Mathematical Mindset 72
Individualized Learning 73
Student Connectedness 74
Meaningful and Active Participation 75

Student Monitoring 76
Program Evaluation 78
Implementation 79
Potential Resources and Existing Supports 80
Potential Barriers 81
Implementation and Timetable 82
Roles and Responsibilities of Student and Others 82
Implications Including Social Change 84
Far-Reaching 85
Conclusion 86
Section 4: Reflections and Conclusions 87
Project Strengths and Limitations 88
Recommendations for Alternative Approaches 90
Scholarship 90
Project Development and Evaluation 91
Leadership and Change 92
Analysis of Self as Scholar, Practitioner, and Project Developer 93
The Project's Potential Impact on Social Change 95
Implications, Applications, and Directions for Future Research 96
Conclusion 98
References 100

Appendix B: Context Description.....127

Appendix C: Object Description, Personalized Education Plan (PEP) 133

Appendix D: Letter Requesting Permission to District 135

Appendix E: Letter of Cooperation from District.....137

Appendix F: Participant Invitation Letter.....137

Appendix G: Voluntary Teacher Confidential Online Questionnaire 139

Appendix H: Logic Model Diagram of Theories.....140

Appendix I: Student Survey administered by SDCOE external evaluator 141

List of Tables

Table 1. Research Questions/Data Collection and Analysis Summary 33

Table 2. Teacher Responses to Questionnaire 50

Section 1: The Problem

Demographics are constantly changing in U.S. schools, and with those changes so do the academic needs of the students change. Our schools must continue to meet those academic. For example, many students arrive with skills that are below grade level in mathematics. Students who transfer from school to school have a greater difficulty maintaining success in math. However, according to Mullis, Martin, Foy, and Arora (2012), in the Trends in International Mathematics and Science Study (TIMSS) report, math is the foundation on which many other subjects build. To be productive global citizens, students need to be successful in math. Studies by Mullis et al. (2012) and Shores and Shannon (2007) revealed that students experience higher academic success in math when they are motivated, engaged, set goals, self-regulate their learning, and feel safe at school. Work by Geary (2011) and Pool, Carter, Johnson, and Carter (2012) suggest similar findings, as their research showed that early mastery of math skills are important for successful math achievement as students move up in grade level; if skills are not developed early, academic difficulties will arise later.

One student subgroup of concern that has shown low math scores in schools across the nation is the military dependent student subgroup. High mobility has a detrimental impact on math achievement among these students (Bradshaw, Sudhinaraset, Mmari, & Blum, 2010; Coronado Unified School District, 2014; Parke & Keener, 2011; Thompson, Meyers, & Oshima, 2011; United States Department of Commerce, 2014; United States Department of Defense Educational Agency, 2013). United States military service members are often required to move to a different duty station after a period of between nine months to two years. As such, military dependent students who follow their parents in frequent moves enroll at a new school every nine months to two years. The frequent moves often lead to students performing below grade level in

math, which is why many military dependent students may need to receive additional academic support to become proficient. Research shows that as students move up in grade level, the achievement gap widens in math, motivation to perform decreases, and engagement diminishes (Cutuli et al., 2013; Gottfried, Marcoulides, Gottfried, Oliver, & Guerin, 2007; Jones, 2008; Mullis et al., 2012; Skinner, Kindermann, Connell, & Wellborn, 2009, U.S. Department of Education, 2011). Metallidou and Vlachou (2010) found that motivation in math declines steadily as students move up in grade level, but also noted that motivation also decreases within the same grade level from the beginning to the end of a school year. Parke and Kanyongo's (2012) work suggested that even after controlling variables such as socioeconomic status and gender, highly mobile students still showed an overall declination in math achievement at grades 3 through 5. Heinlein and Shinn (2000) presented similar findings, noting that mobility during the elementary years has even a greater negative impact on achievement than mobility in later years. This suggests that educators should provide more supports for the high mobility students during the critical elementary years when students are attaining foundational skills. Due to the frequent moves and deployments of parents, removing barriers to learning for military dependent students as they transfer between schools several times throughout their K-12 education is a critical issue (Grigg, 2012). To address this issue, most states have adopted the Military Children's Compact, an agreement that promotes flexibility within the education system in order to ensure academic Military Interstate Children's Compact success and well-being for military dependent students (Commission, 2013).

The widening achievement gap, lack of motivation to succeed, and decreased engagement are all factors that exacerbate declines in achievement for military dependent students. Moreover, researchers argue that diminished engagement has an adverse effect on

learning and can inhibit self-regulation and individual strengths as students move up in grade level (Pintrich & Zusho, 2002; Zimmerman, 1990). The combination of being below grade level in math, having a potential lack of motivation, and displaying a declining engagement with school are of great concern for both military and nonmilitary students. The current study focuses on the math performance of the military dependent student subgroups at two elementary sites in grades 3 through 5 in the Coronado Unified School District.

The purpose of the project study is to complete a program evaluation on one component of the district's Students, Technology, Education Plans = Success (STEPS) Project, which is also called the Personalized Education Plan (PEP, Coronado Unified School District, 2012). Both military and nonmilitary students in grades 3 through 5 across the district participate in the PEP program to support the district goal of all students becoming proficient in mathematics (see Appendix B for a description of the context and setting for the study, and Appendix C for a detailed description of the PEP Program). PEP is a goal setting program to individualize student learning and focus on students' work toward mastery in grade level mathematics. Determining students' math levels quickly after enrollment allows school sites to begin intervention services almost immediately, if necessary, and support students in achieving grade level proficiency (Skinner et al., 2009). Each elementary student in the district under study complete a computer based math assessment at the beginning of the year. Based on the assessment score, the teacher and student participate in a conference to set a new math goal to work toward for the next trimester. Monitoring student progress on the computer-based math program enables the teacher to see areas of difficulty, which are addressed immediately. Through individualized practice on skills and concepts, students are able to self-regulate their learning based on what skills and concepts need to be mastered in their personalized learning pathway (Burns, Klingbeil, &

Ysseldyke, 2010). The PEP program provides students opportunities to set personalized math goals through one-to-one conferences with teachers.

To determine if the PEP program has been effective and fulfilled the desired outcomes, a utilization-focused program evaluation was completed. The utilization-focused evaluation approach (Patton, 2008), allows a researcher to look at potential program improvements, strengths and weaknesses, perceptions, efficiencies, emerging ideas, and progress within a particular program. Patton's (2008) utilization-focused outcomes framework consists of six elements. They are: (a) a specific participant target group, (b) desired outcome of target group, (c) one of more indicators for the desired outcomes, (d) details of data collection, (e) how results are used, and (f) performance targets.

The first element is the target of a specific participant group. The students in grades 3, 4, and 5 at the elementary schools in the district of study were the specific participant group for the evaluation. Military dependent students were a special focus group for this project study.

The second element is the desired outcome of the target group. An increase in math assessment scores was the desired outcome. Additionally, an increase in motivation, engagement, and self-regulation through the goal setting process were the secondary desired outcomes.

The third element consists of identifying the indicators for the desired outcomes. In this project study, three forms of data were collected to determine whether the PEP goal setting conferences made a difference in student achievement, motivation, engagement, and self-regulation. The desired outcome was to have students increase their math assessment scores and show positive indicators toward math, goal setting, learning, motivation, engagement, and self-regulation. Student math scores, San Diego County Office of Education (SDCOE) student survey

results, and teacher responses from an online open-ended questionnaire are the indicators which determined the outcomes.

The fourth element is collecting data. Through a multi-methods approach, three forms of data were collected and analyzed. The Northwest Evaluation Association Measures of Academic Progress (NWEA MAP) math assessment scores were collected for the military dependent and nonmilitary dependent student groups before the implementation of the PEP goal setting process and again at the end of each year to look for growth in scores for all students. Next, the SDCOE survey results showed how students felt about goal setting. Lastly, I examined the teacher responses from the online open-ended questionnaire to glean information regarding student motivation, engagement, and self-regulation within the goal setting process and success with math.

The fifth element is defining a performance target. I had hoped that ninety percent of military dependent students would increase their MAP math assessment scores after participating in the PEP goal setting intervention program. This performance target was critical information for the district of study to use when determining possible next steps for the PEP goal setting program.

The sixth and final element is use. The district of study will use the information from the program evaluation to determine the following:

- If the PEP program is serving the needs of the targeted population.
- New potential areas for training and professional development for teachers.
- Possible new insights for improving programs from the classroom teachers.
- Areas for continued dialogue and support.
- If the PEP program objectives were obtained.

- Whether the PEP program needs modifications, changes, or improvements.
- If the PEP program will continue or be terminated.

The district of study will use the information gathered above from the program evaluation, determine cost involved for the plan, and will then set up timely evaluations for the PEP goal setting program.

All six elements of Patton's (2008) utilization-focused evaluation approach, explained above, are included in the evaluation of the PEP process and overall PEP program. Patton's (2008) utilization-focused model elucidates stakeholders' needs. The model is grounded by the data gathered from key people involved in the PEP goal setting program.

The research study begins with the description of the problem. The rationale of the study, the study's significance, research questions, a review of the literature, a summary, and overview of implications follow. After the methodology, a project study design follows. Next, data sources, data collection, and analysis are presented. Finally, the project context description, which explains the Department of Defense Educational Agency (DoDEA) STEPS grant, and object description, which explains the PEP program component of the STEPS grant, follows in the appendices to complete the research study.

Definition of the Problem

In the district of study elementary schools where the program evaluation study took place, district and site assessment data indicate that military dependent students' math scores were lower than other student subgroups. Students' academic success is often compromised by frequent relocations from one school to the next (Coronado Unified School District, 2010, U.S. Department of Defense Educational Agency, 2013). As military students move to many different

states, enrollment in multiple districts throughout their school experience is not unusual. Cutuli et al. (2013) revealed that frequent mobility creates academic gaps in achievement and other adjustment problems in the school setting. Many military dependent students arrive at a new school with gaps in their foundational math skills, as these skills are often below proficient (Murawski, & Hughes, 2009). The problem in the local setting is meeting the needs of the military dependent student population who are below proficient in math.

Teachers in the district of study use the PEP goal setting conferences to counsel students on specific areas of weakness in math to increase proficiency. Based on analysis of district math data and outside research on motivation, engagement, and self-regulation, the PEP goal setting conference program component was initially established by the district to help support all students below proficient in math in grades 3-5 in 2012 (see Appendix B and Appendix C). PEP goal setting conferences provide opportunities for students to see their growth and accomplishments over time. The conferences are important because students' goals are set, monitored, and revisited during assessment periods. When goals are set, orientation and level of engagement align with achievement and overall success in school (Magi, Lerkkanen, Poikkeus, Rasku-Puttonen, & Kikas, 2010; Meece, Blumenfeld, & Hoyle, 1988). Poncy, McCallum, and Schmitt's (2010) study showed that a behaviorally oriented method of teaching and learning is more effective than a constructivist method because students are able to set goals, talk with their teachers, and work as a group to solve math problems. Poncy et al., found the behaviorally oriented approach more effective in increasing student performance in math than other approaches. Commending students for meeting their personal math goals and praising students' abilities increases students' desires to succeed in math (Poncy et al., 2010). Other studies have

shown when students meet or exceed their set goals, motivation and engagement are positively affected (Cruz & Zambo, 2013; Johnson, 2008).

Prior to the current study, the PEP component of the STEPS Project had not been evaluated to determine if the PEP goal setting component is effective among military dependent students. This indicates a gap in practice. By implementing Patton's (2008) utilization-focused evaluation approach, the current research study sought to determine if PEP goal setting conferences are effective in supporting military students in math and to determine whether the program aligns with what the previous research suggests is most effective (Patton, 2008). To address the gap in professional practice, I reviewed the PEP process and the PEP program component of the grant, I gathered feedback from all stakeholders, and noted thoughts for additional actions in the evaluation report based on the findings. Additionally, the information from this evaluation was used to give the district of study a project report in order to make decisions regarding the current PEP goal setting program at the elementary level.

Rationale

I begin the following section by stating evidence of the problem at the local level within the Coronado Unified School District. Next, I provide the evidence from the literature as concrete examples of the problem at the local and broader levels. Finally, I share the purpose of the program evaluation.

Evidence of the Problem at the Local Level

Military students relocate every nine months to two years due to one or both of their parents' work in the U.S. military, a factor which may lead to lower math scores for these students. The Coronado Unified School District analyzed state test data and found the need for improvement of mathematics skills as a primary goal for all students. However, district data

showed that out of 1,182 military dependent students in grades TK-12, 29% were below proficient levels based on state standardized test scores in math, compared to 24% for the civilian students (Coronado Unified School District, 2012). The PEP program component of the STEPS Project assists teachers in identifying students' areas of need in math and helps students take responsibility for their own learning outcomes. One of the PEP program goals is to ensure that military dependent students achieve at the same level as their civilian peers through a highly interactive and individualized instructional system, a system that provides immediate feedback to the students, teachers, and parents.

The Coronado Unified School District has a 38% military-dependent student subgroup demographic. In 2012, the district was awarded a three-year grant by DoDEA. The grant was titled, "Students, Technology, Education Plans = Success" and shortened to STEPS Project. The district created PEP, a component of the STEPS Project, specifically to support all students in grades three through five who are below proficient in math. All students at both elementary schools have a PEP in grades 3-5 for math. However, for the purposes of the program evaluation, military dependent students were the primary focus.

It is the responsibility of a school to support student achievement. Teachers must meet the academic needs of each student at school (Jones, 2008; Killion & Roy, 2009; Love, 2009). Beecher and Sweeny (2008) reported that by focusing on students' strengths, a teacher can help improve that student's achievement in math. As a way to provide support to students and increase achievement, the district of study created the PEP component of the STEPS Project to provide intervention support for all students below proficient in math. Feedback and progress monitoring are two key elements of a successful intervention plan (Lembke, Hampton, & Beyers, 2012). The PEP program provides opportunities for students to receive feedback on their goals as

teachers monitor student progress throughout each trimester to ensure growth in achievement. PEP goal setting conferences support student centered learning within intervention groups, which are structured using student assessment data (Killion & Roy, 2009; Love, 2009). The PEP component of the STEPS Project (a) guides students in setting goals, (b) supports students in monitoring their own growth and progress in the math learning process, and (c) increases students' motivation, engagement, and ability to self-regulate.

Zhao, Valcke, Desoete, and Verhaeghe (2011) found that there are many predictors of math performance, such as family characteristics, careers of parents, and individual variables such as frequent relocations as in the case of military dependents. All of the predictors charted by Zhao et al. were found to impact student achievement in math. The purpose of initiating the PEP program was to motivate and engage students in math and support students to self-regulate their progress toward an increase in math achievement. Therefore, as a part of the research study, student achievement, motivation, engagement, and self-regulation were evaluated as program outcomes.

I used the utilization-focused program evaluation with student math assessment data to determine whether the PEP program has influenced student achievement. I analyzed and coded confidential teacher online questionnaires (see Appendix G) to determine whether teachers felt the PEP goal setting process supported student motivation, engagement, and self-regulation. Further, I analyzed the student engagement survey data from the San Diego County Office of Education to determine if students showed a difference in their motivation, engagement, and self-regulation before and after their involvement in the PEP program (see Appendix J).

To fulfill the utilization component of the formative program evaluation, I addressed outcome criteria by evaluating teacher feedback through the online questionnaire, analyzing

student survey results from the San Diego Office of Education, and reviewing student math assessment data obtained through the MAP. By addressing the outcome criteria through the three sources of data referenced above, the evaluation provides information about the PEP goal setting program and was used to determine if the PEP program is making a beneficial difference in student achievement. The multi-method analyses will be used by the district of study to determine whether to modify or refocus the PEP program component of the STEPS Project. Based on the collection of data and the discussion of the outcome of the PEP program over the past three years, the program evaluation report was shared with all stakeholders to determine next steps in supporting student achievement (Fitzpatrick, Sanders, & Worthen, 2004).

Evidence of the Problem from the Professional Literature

As military students move to many different states, enrollment in multiple districts throughout their school experience is not unusual. Cutuli et al. (2013) revealed that frequent mobility creates academic gaps in achievement and other adjustment problems in the school setting. Many military dependent students arrive at a new school with gaps in their foundational math skills, which are often below proficient (Paik & Phillips, 2002). The problem from the professional literature was meeting the needs of the high mobility military dependent student population who were below proficient in math. A director of learning within the district of study stated the main reason the PEP goal setting program was created was to benefit all students; however, the students who were below proficient were a priority. The concern for motivation, engagement, and self-regulation within student learning were also important aspects of the PEP program (Curriculum and learning director, personal communication, May 10, 2013). Studies have shown when students meet or exceed their set goals; motivation and engagement increase

(Cruz & Zambo, 2013; Johnson, 2008; Magi et al., 2010; Meece et al., 1988). For the purposes of the study, the focus was on math goal setting with the military dependent student subgroup.

Several studies (Gottfried et al., 2007; Meece et al., 1988; Skinner et al., 2009) have shown that motivation decreases as students age. Despite the research on declining student motivation and engagement, little is known about whether PEP goal setting with military dependent students in math improves achievement, impacts motivation, increases engagement, and helps with self-regulation. The lack of research regarding the PEP goal setting process reflects a gap in knowledge within the professional literature (DeFur & Korinek, 2010; Gottfried et al., 2007; Hake, 1998; Hudley, Daoud, Hershberg, Wright-Castro & Polanco, 2002; Johnson, 2008; McCarthy & Kuh, 2006; Mullis et al., 2012; Parke & Kanyongo, 2012; Ruhl, Hughes, & Schloss, 1987).

To further complicate the growing concerns for the military dependent subgroup, Smrekar and Owens (2003) reported that the turnover rate of new students is approximately 37% at schools with large subgroups of military dependent students. In addition, most active duty enlisted military parents only have a high school diploma, which creates an additional concern with the lack of educational resources in the home for students (United States Census Bureau, 2002). In a study performed by Parke and Kanyongo (2012), mobility had an impact on math achievement. Their work showed that highly mobile students were about one year behind their nonmobile peers, as frequent relocations created gaps in student learning, curricular inconsistencies, and less instructional time due to absences. The Local Control Funding Formula (LCFF) and the California Longitudinal Pupil Achievement Data System (CALPADS) directives do not consider military dependent students a subgroup in California, even though they are a large subgroup in many districts across the nation (California Department of Education, 2014a;

California Department of Education, 2014b). It is important that military dependent students continue to be provided the intervention services necessary to support their learning to bring them up to grade level in math.

The purpose of the current utilization-focused program evaluation study was to explore the effectiveness of the PEP goal setting program component of the STEPS Project. The study explored whether goal setting with students increased math achievement, motivated students to be successful, increased engagement, and supported students in self-regulating their individual growth and performance by communicating with teachers about student behavior. The next section presents common terms associated with the PEP program.

Definition of Terms

The following terms used throughout the proposed research study are defined below:

Academic achievement: Student performance in learning and assessment.

Department of Defense Educational Agency (DoDEA): Educational agency for the United States military.

Engagement: "Energized, directed, and sustained action." (Skinner et al., 2009, pp. 225)

Motivation: Factors that cause a student to want to complete the tasks whether reinforced intrinsically (feel good feeling) or extrinsically (tangible reward, prize, or recognition)

Personalized Education Plan (PEP): Individualized goal setting program for students that sets a personalized pathway for learning based on students' mastery of concepts and skills.

Self-regulation: "Pertaining to metacognitive (thinking about your own thinking) and management such as planning, skimming, and comprehension monitoring and students' persistence at difficult/boring tasks and working diligently." (Shores & Shannon, 2007, pp. 236)

Students, Technology, Education Plans = Success (STEPS) Project: Name of 3-year DoDEA grant awarded to Coronado Unified School District in 2012.

Significance

Researchers have focused on mathematics achievement and designing successful intervention programs for special education, English learner, and low socioeconomic subgroups of students. However, there is limited research on military dependent students' high mobility rates and the impact of high mobility on achievement. Putting in place a system of accountability for highly transitory military dependent students is critical to their success. Out of the 46% of military dependent students districtwide at both elementary schools included in the current study, the average turnover rate is typically 37% district wide (Coronado Unified School District, 2014). Setting student academic goals could increase the motivation for students to want to excel and meet or exceed their set goal (Smrekar & Owens 2003). A coordinated effort to create a system within all school districts to heighten the awareness and the commitment to the academic success of military dependent students is vital. Just as districts focus and commit to subgroups such as English learners, socioeconomically disadvantaged, Hispanic, migrant, and students experiencing homelessness, so should the military dependent (highly transitory) students be a focus.

The purpose of the utilization-focused program evaluation study was to examine the current practice of student goal setting for military dependent students who are below proficient in math and potentially provide new information on future goal setting processes for both military and nonmilitary students. The study was necessary to determine whether the academic needs of military dependent students are being met in the area of math and to facilitate further decision making regarding the effectiveness of the PEP component of the STEPS Project. The

results of the program evaluation should determine if military dependent students are receiving the appropriate tools necessary to achieve their math goals through the support of the PEP process in the local setting. The evaluation created by this project will assist the school district administration in determining future district decisions regarding staffing and funding for math intervention to support the PEP process. Further, the evaluation addressed the gap in professional practice that existed because, to date, there had been no evaluation completed on the PEP program since its inception in 2012.

Research Questions

The following research questions were developed to align with the purpose of the utilization-focused program evaluation on the PEP component of the STEPS Project. Much of the background literature focuses on the effectiveness of student goal setting in relation to the motivation of students to achieve to proficient levels, as well as the importance of engagement in learning and self-regulation of learning and achievement. Using several scholarly sources and what is known about the PEP goal setting process for students, the following research questions were appropriate in providing information that can be used to further define the future of the PEP goal setting process. Research Question 1 focuses on the quantitative portion of the proposed study, which examined student math scores to determine if the PEP goal setting process influences student test scores. Research Questions 2, 3, and 4 are qualitative questions informed by teacher questionnaire narrative responses that focus on different aspects of the phenomenon, which specifically align to my theoretical framework on motivation, engagement, self-regulation, and student goal setting. Research Question 5 focuses on students' perceptions of the goal setting conferences using student survey results from the SDCOE. Both the PEP goal setting student/teacher process and the overall program are evaluated in the research study to improve

and refine elements of the PEP goal setting program. The answers to the main research questions provide information about the PEP goal setting process for students and teachers, which allows for an effective, thorough program evaluation to be completed.

The research questions to evaluate the effectiveness of the PEP goal setting process are:

RQ1: Is there a change in math assessment scores after implementation of the goal setting conferences with all students?

H_01: There is no statistical significant difference in math assessment scores after implementation of the goal setting conferences with all students.

H_a1: There is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with all students.

RQ1.a: Is there a change in math assessment scores after implementation of the goal setting conferences with just military dependent students?

H_01a: There is no statistical significant difference in math assessment scores after implementation of the goal setting conferences with military dependent students.

H_a1a: There is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with military dependent students.

RQ1.b: Is there a change in math assessment scores after implementation of the goal setting conferences with just nonmilitary dependent students?

H_01b: There is no statistical significant difference in math assessment scores after implementation of the goal setting conferences with nonmilitary dependent students.

H_a1b: There is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with nonmilitary dependent students.

RQ2: How do teachers feel goal setting conferences affect motivation of military dependent students in math?

RQ3: How do teachers feel goal setting conferences influence military dependent students' level of engagement in math?

RQ4: How do teachers feel goal setting conferences influence military dependent students' abilities to self-regulate in math?

RQ5: How well do students value the goal setting conferences?

$H_0 5$: There is no statistical significant difference in the value of goal setting conferences between military-dependent and nonmilitary students.

$H_a 5$: There is a statistical significant difference in the value of goal setting conferences between military-dependent and nonmilitary students.

Review of the Literature

In this section, I present a review of the literature associated with student goal setting, motivation, engagement, and self-regulation in regards to the PEP program and student achievement. I discovered the literature reviewed for the research study using the Walden University Library access to several educational and multidisciplinary databases. A collection of scholarly, peer-reviewed journals, articles, literature reviews, books, and websites focused on *program evaluation, motivation, engagement, goal setting, self-regulation,* and *achievement* were retrieved and reviewed through ERIC, Sage, ProQuest Central, Education Research Complete, and Academic Research Complete. Additionally, several government websites and documents through the Walden Library Google search provided critical information to support an in-depth understanding of math performance and goal setting with the military dependent student subgroup.

Conceptual Framework

Four theories constituted the overall framework of the program evaluation study. Goal setting, motivation, engagement and self-regulation based learning are the conceptual framework for the current research. Goal setting and motivation theories provide a greater understanding of the actual PEP process, which was developed to motivate students by setting up learning goals during one-to-one teacher student conferences at the beginning of each trimester. Therefore, goal setting and motivation theories are a part of the framework. Teacher input on student engagement and self-regulation in the classrooms was obtained through teacher interview questions, which focused on student engagement and self-regulation observed or not observed in the classroom due to the goal setting process. Overall, the framework of the four theories is embedded in the PEP program and will provide critical information about the effectiveness of the PEP program through a program evaluation. District administration will use the findings from the evaluation to determine next steps for the PEP program.

Goal setting theory. Goal setting theory is a useful framework for understanding student achievement with military dependent students performing below grade level in math. The initial goal setting theory is based on Edwin Locke's research from the 1960s in workplace satisfaction and productivity. Locke (1968) reported that there is a relationship between goal setting and performance. Accordingly, Locke determined that clarity, challenge, commitment, feedback, and task complexity are five principles to goal setting that increase success in the professional arena.

The first principle is clarity. A student must set clear, understandable goals. When goals are clear, they are easier to measure (Locke, 1968). Students are able to track their progress more efficiently when clear goals are set and growth is measured periodically.

The second principle is challenge. A student who feels a healthy challenge is often more motivated to attempt achieving a goal. Setting a goal that is not too difficult or too easy to achieve is essential in keeping students' interest (Locke, 1968). Setting incremental rewards on the way toward meeting the goal will motivate students to continue working through the challenging process.

The third principle is commitment. Once a student has set a goal that is clear and challenging, then committing to meet or exceed the goal is the next step. Committing to a goal is more manageable when students think about what it will feel like once they have achieved their goal (Locke, 1968). Students are more likely to be more engaged in the steps toward completing the goal when they think about the end result.

The fourth principle is feedback. Measuring progress toward a set goal through feedback from teachers and other students encourages the goal setting process and allows students to make adjustments based on the feedback provided (Locke, 1968). The goal setting conferences between a teacher and a student provide opportunities for discussions regarding the goal that has been set.

The fifth and final principle is task complexity. Throughout the mastering of a goal, teachers and students should monitor the progress to make sure the steps toward mastery are not too complex or overwhelming (Locke, 1968). There is a fine balance between challenging and too easy. Finding that balance is based on the individual student's motivation, level of engagement, and ability to persevere. Reassessing goals and breaking larger goals down into smaller goals is always an option.

When applying Locke's (1968) goal setting theory in the classroom, students set math goals, meet with teachers to discuss progress on goals, and work toward meeting or exceeding

set goals. Locke's five principles mirror the actual PEP goal setting conferences and the e-learning individualized math pathway that each student can access to work toward mastery of math goals.

Engagement theory. Engagement theory is founded largely in the works of Shneiderman (1994) and Kearsley (1999). Both researchers determined that meaningful learning occurs when students are engaged in learning through an individualized program geared toward student goals. Students should be participating in worthwhile tasks based on individual needs and levels that they can use to show mastery through a pathway that has set goals. When tasks are worthwhile and meaningful, engagement in the completion of the tasks to meet a goal increases. When students can track their progress and see their success, whether it is through a technology-based program or not, their engagement levels are higher. Shneiderman (1994) and Kearsley (1999) both believe that while individualized technology-based programs enhance student engagement to a greater degree, all learning should include three components in order to result in the deepest level of student engagement.

The first component is called *relate*. In this component, a student engages in a meaningful activity along with other students to accomplish a goal. In other words, students from various backgrounds work together toward mastery of goals. Students work both independently and in a group to develop their interpersonal skills, give and take feedback, and collaborate as a group to reach the goal while the teacher facilitates the process from beginning to end (Shneiderman, 1994; Kearsley, 1999).

The second component is called *create*. In order to be fully engaged in an activity, a student creates his or her own individual process as to how the task or project will be completed

in order to attain the goal. The student has free choice and feels a sense of creativity and control over the student's own learning (Shneiderman, 1994 & Kearsley, 1999).

The third component is called *donate*. The value of the learning and the experience that a student encounters during meaningful activities while completing the goal instills confidence and a sense of satisfaction. Student motivation also increases when the learning experience is shared from the classroom to the real world (Shneiderman, 1994; Kearsley, 1999).

Shneiderman (1994) and Kearsley (1999) advocate the importance of attaining a goal through meaningful, purposeful learning. Relating to the task or project, creating the process to complete the task or project, fulfilling a sense of satisfaction of meeting the goal, celebrating the learning, and sharing with colleagues and stakeholders are the key methods that result in full student engagement to complete a task and meet an individualized or group goal.

Theory of motivation. Maslow's theory of motivation (1943) speaks to both intrinsic and extrinsic motivating factors that lead to success in the goal setting process. The PEP goal setting program provides a variety of incentives to encourage and motivate students who are below grade level in math, and intrinsic and extrinsic motivational factors are considered a potential factor in the current study. Maslow's theory of motivation (1943) informs student learning because if students are not motivated to learn, then knowledge and information are not retained. A satisfied need is not a motivator. Therefore, the impact on teaching and learning is greatly impeded when students do not feel the need or see the meaning in the content. To motivate students in math and keep them interested in their own learning, teachers engage students in individual goal setting conferences to provide meaning in the content and improve their math performance. Maslow's theory further supports the importance of the teacher's role in student learning and motivation.

Theory of human motivation. McClelland's theory of human motivation (1987) has application within the current research study with respect to the areas of goal setting and student achievement. Sometimes called the learned needs theory, McClelland stated that achievement, affiliation, and power are motivators for everyone. Specifically, the achievement motivator of McClelland's (1987) human motivation theory connects well with the PEP goal setting process. Having a strong need to set and accomplish goals, expecting continuous feedback on progress, and enjoying working on individualized learning paths are all achievement motivator characteristics of McClelland's theory that align with the current research study.

Self-regulation theory. Researchers such as Zimmerman (1990), Marzano, Pickering, and Pollock (2001), and Pintrich and Zusho (2002) have conducted studies on self-regulated learning and goal setting connected to student achievement. Setting academic goals with students to determine focus areas for improvement and chart progress is critical to the success of student learning. Students need to take control of their own learning and be active participants to motivate them to want to improve and self-regulate (Zimmerman, 1990).

In summary, there are several theories included in the conceptual framework of the study (see Appendix H). For the purposes of the utilization-focused program evaluation, goal setting, engagement, motivation, and self-regulation learning theories are presented as important factors to the creation of the PEP goal setting program for students. Many of the studies referenced within the proposal have overlaps within each of the theories. For example, the works of Adam (2010), Cruz and Zambo (2013), Jones (2008), and Meece et al., (1988) speak to goal setting, individualized learning, and the effect on student motivation. The investigations conducted by Marzano et al. (2001), Pintrich and Zusho (2002), and Zimmerman (1990), provide information

on self-regulated learning and goal setting connected to student motivation and engagement level.

Contemporary Literature

The current research studies involving goal setting, engagement, motivation, and self-regulation factors use student achievement and performance as a measure to gauge learning in the classroom. According to several researchers, many factors influence mathematical achievement. Since the program evaluation of the PEP goal setting process focuses on student engagement, motivation, and self-regulation in math, the next section provides current research studies for each of those factors to support the conceptual framework of the research study.

Student goal setting. Johnson's (2008) casual-comparative research study notes the importance of individualized goal setting conferences with students and teachers on a one-to-one basis. Based on survey data from 1,200 high school students, the study found students experienced higher levels of engagement when they are able to set learning goals and engage in meaningful activities to reach their targeted goals.

Adam's (2011) stated that individualized learning based on student created goals motivated elementary students to perform higher and more efficiently in practical application examples. Goal setting conferences that are part of the PEP support individualized learning as described in Adam's article can help to increase feeling of success as a motivator. Indeed, Yang and Taylor (2015) found that students who have academic learning goals perform better, have lower test anxiety, and exhibit help-seeking behaviors than students who do not have academic learning goals. Work by Magi et al. (2010) reported similar results.

Student engagement. Student engagement has been highlighted in the professional literature; for instance, McCarthy and Kuh (2006) found that engaged students spend more time

on complex tasks and as a result experience greater satisfaction and an increased feeling of success. The article specifically addressed the need for early math intervention in the elementary school years. McCarthy and Kuh's (2006) research is relevant for the scope of the present study, specifically when looking at whether the PEP program is effective in supporting military dependent students below proficient in math.

Jones (2008) discusses the importance of a personalized learning component to support student engagement, which aligns with the research study of the PEP program component of the STEPS Project. Jones' paper highlights some of the focus areas in support of the current research study regarding goal setting and student engagement. Specifically, Johnson's (2008) quantitative study emphasized the difference between students' feelings of engagement between a non-traditional and a traditional school setting. Johnson showed how teachers who offered more one-to-one student goal setting time were able to better meet the developmental needs of students, thereby increasing engagement levels of students, which aligns with the motivation and engagement theoretical frameworks of research study.

Student motivation. In Chapter 11 of Handbook of Motivation at School, Skinner, Kindermann, Connell, and Wellborn (2009) draw on the work of Maslow (1943) and Gottfried (1985) to show how motivation and engagement diminished with age, especially with at-risk subgroups of students. Their work aligns with the focus of current research study regarding how students have a connectedness to their learning in terms of being motivated to do well and meet the goals they have set. The article emphasized that if schools do not foster relationships with students, then students become disengaged, unmotivated, and eventually fail. Along these same lines, Skinner et al. (2009) found that engagement contributes to the deepening of the learning. According to Adams (2011), individualized learning also motivated students to compete with

themselves on their own learning path instead of competing with their peers, which touches on self-regulation and motivation to succeed noncompetitively. The work of Maslow et al. (1943) supports the objective of the STEPS Project PEP program to have students actively engaged in setting their math goals and conference with teachers throughout the year.

Multiple studies indicated a strong link between motivation and individualized learning, which the PEP program fosters for students. For example, Meece et al. (1988) surveyed 275 fifth and sixth graders students' in the areas of goal orientation, level of engagement, attitudes toward science, motivation, and perceived competence. Their experimental quantitative study found that motivation had an effect on level of engagement and goal orientation. Meece et al. (1988) further argued that student perceptions of their own abilities in upper grades tends to decline and that there exists a critical juncture between elementary and middle school. Carolan, Weiss, and Matthews (2013) analyzed data from math assessments and teacher questionnaires in a longitudinal study that examined middle school achievement in math. Results of the study showed a combination of factors affecting math achievement, of which one was motivation and classroom climate, which is what the SDCOE student survey focuses on for the current research study. Levpuscek and Zupancic (2009) reported results consistent with findings in Carolan et al.'s (2013) study and found that motivational beliefs about math and goal setting had a direct impact on math achievement. Sengodan and Iksan (2012) found that students were more motivated when the math content was at their cognitive level and they set goals based on their personalized pathway. Gurland and Glowacky's (2009) correlational study found that student work became a motivational factor around 3rd grade and the value of an activity more appealing when intrinsically motivated. They argued that when students have a choice in their learning opportunities, even with academic areas they do not feel strong in, there is an increase in

motivation in the classroom. Gurland and Glowacky's (2009) study contradicts Skinner et al. (2009) work which stated that motivation diminishes for students as they move up in grade especially if they are below grade level and require extra support. Adam (2010), Meece et al. (1988), and Skinner et al. (2009) studies inform the current research project, as motivation and engagement moderate the effects of a student's individualized PEP.

Student self-regulation. Shores and Shannon's (2007) research stated that many students in the elementary grades who have gaps in their foundational math skills because of high mobility, do not self-regulate their learning in math. Therefore, high mobility students may not have a high interest in math. Further, the study found that students who self-regulate, in general, are mostly high-achievers overall in school. Metallidou and Vlachou (2010) reported results consistent with the findings in Shores and Shannon (2007), but also noted that self- regulation is both a process that students need to be taught as well as a product in the accomplishment of a goal or activity.

Ocak, & Yamaç (2013) argued self-regulation allows students to have ownership of their learning, which enhances the overall attitude towards math in a positive way. When students feel in control of their learning and have choice in the creation of how they are going to attain a goal, they are also learning how to self-regulate at the same time. Ocak, & Yamaç's (2013) study informs the current research project, in that, as students go through the PEP goal setting conference, they are taught how to self-regulate their pacing of learning math. Ultimately, it can be said that there exists an abundance of research on self-regulation and student learning, which supports how self-regulation and student goal setting impacts students math achievement scores.

Summary

Overall, multiple studies throughout the literature reviews showed goal setting, engagement, motivation, and self-regulation are factors impacting student learning. High mobility within the district of study is also a factor impacting student learning. Several research studies discussed concerns regarding declining math scores as students move up in grade level, in general, while other studies reported diminished motivation and engagement occur as students move up in grade level and within an academic school year.

Researchers also validated the benefits of goal setting and self-regulation, but agreed that further research needs to be completed in the area of goal setting and student achievement in math. The current research study determined if math achievement scores increased based on the implementation of the PEP goal setting conference process for both military dependent and nonmilitary students and also discussed how engagement, motivation, and self-regulation were influenced. The program evaluation outcome will create a better understanding of the PEP goal setting conferences and provide insight into how and if motivation, engagement, goal setting, and self-regulation factors affect overall student achievement in math.

Implications

Student performance in math is critical in the elementary years. Military dependent students transitioning to different schools due to military orders is a way of life. Due to the multiple moves a military family makes during the K-5 educational years, military dependent students are at high risk for falling behind in mathematics. The program evaluation will not only determine if the objectives of the PEP goal setting program were met for all students and find out how teachers and students feel about the PEP program, but it will also determine if the military dependent students showed growth in their math scores as compared to the nonmilitary student

group. Based on the results of the research, several implications could exist. My project is an evaluation report presentation to all stakeholders on the outcome of the PEP goal setting program evaluation. The information gathered from the program evaluation was presented at a district board meeting and at a parent information night at both elementary schools (see Appendix A). Additionally, another implication included the submission of another grant application for an additional DoDEA grant to fund intervention time and expand the PEP goal setting program to other academic areas.

The program evaluation design focused on collecting data on the PEP student goal setting component of the STEPS Project DoDEA grant. Through the analysis of archival math data, confidential teacher questionnaires, and a discussion about the student survey results, created and administered by an external evaluator, the school district and school board will be able determine next steps for the PEP program. The results can assist the district in developing a plan to improve or modify the PEP objectives at the elementary level. Elementary administrators and teachers can use the results of the program evaluation to determine future professional development, further identify potential focus areas in mathematics, and focus on more intensive support for students below grade level in math, including the military dependent student population. Teachers may use the data collected within the program evaluation to enhance grade level and school wide Response to Intervention (RtI) level one and two tiers, as well as enhance whole group instruction time and small group remediation time within the general education classroom. Based on the findings from the evaluation, additional implications could possibly include the following:

- District wide professional development on the goal setting process for teachers.
- Board presentation for board members and superintendent's cabinet at a monthly board meeting.

- Expansion of the goal setting conferences to other academic areas other than math.

Once the program evaluation results are presented to all stakeholders, several other possible implications could be discovered through discussion and implemented, if desired. Additionally, this evaluation is available to other educational leaders and practitioners to assist in the creation of effective intervention programs across the nation. Schools will continually receive students below grade level in math. The implications of this study provides social change in the local setting and far reaching settings by providing other districts information on a current goal setting program in the district of study which was created to decrease the percentage of students below grade level in math. Other districts across the state and the nation can utilize the information from the program evaluation to determine an effective math intervention program and minimize the learning curve for military dependent students in school settings.

Summary

In summary, the utilization-focused program evaluation will provide information on the PEP goal setting program using math assessment data, teacher input, and student survey data to determine program effectiveness and potential areas of improvement. The evaluation will enable stakeholders to act on participant feedback and adjust the current PEP program at the elementary level. Additionally, factors such as motivation, engagement, goal setting, and self-regulation are investigated in an effort to improve mathematic achievement for all students, whether military dependent or not.

Section 2 of this paper explores the methodology to the program evaluation and provides reasons for selecting the particular methodology over others. The section begins with an introduction, a description of the type of program evaluation being conducted with justification, overall goals, and limitations of the evaluation. In addition, data collection and analysis will be

reported. Section 3 will explain the program evaluation and proposed actions based on the data analysis. Finally, Section 4 is a discussion of the scholarship of the project, followed by a reflection, and discussion for potential social change from the program evaluation.

Section 2: The Methodology

For the purpose of the utilization-focused evaluation study, I implemented a multi-methods approach to allow for greater depth of information in order to determine if the PEP program has met the intended objectives (Plowright, 2011). Specifically, the purpose of gathering quantitative and qualitative data concurrently for this research study was to provide data from various sources covering teacher perceptions as well as student scores from the PEP program. I used multiple sources of data, consisting of math assessment scores, student survey results, and teacher responses on questionnaire, to help triangulate results and provide clear and solid findings. The quantitative data collection helps measure progress and success of students from a numerical standpoint. The qualitative data collection helps to tell the story from the teachers' viewpoints and gives the human context. By collecting data that is both qualitative and quantitative, the research study embedded two different strands of research data collection to provide a thorough, comprehensive program evaluation. The use of both kinds of research allowed for greater depth, alternative perspectives, and an end product that is both valid and reliable (Creswell, 2012). Further, triangulating the multiple sources of data strengthened the trustworthiness of the overall results of the study, and the multiple sources complemented each other to produce clear, solid findings for the district to support decision-making in regards to the PEP program (Plowright, 2011).

The outcome of the program evaluation was to determine if the PEP goal setting process is effective for student success and whether the PEP program objectives have been met. In general, program evaluations determine if a program is effective in improving teaching and learning. The utilization-focused program evaluation delivers the information to the intended users (in this case, the teachers and students) and facilitates future decision making regarding the

PEP program within the district of study. I reported findings from the data to the district of study to be used in a formative manner to support refinements, improve program performance, and support the determination of whether to continue the PEP program. The results from the evaluation will inform decision making of school and district administrators, improve PEP program effectiveness, and assist with potential future plans for PEP goal setting conferences (Levpuscek & Zupancic, 2009). In addition, the information obtained from the utilization-focused program evaluation will provide opportunities to further guide staff and district personnel in identifying needs and intervention activities for military dependent students below proficient in math (Fitzpatrick et al., 2004).

Math assessment scores and the SDCOE student survey results provided the statistical information for the quantitative data. Responses from the teacher online confidential questionnaires provided qualitative data that deepened the understanding of the quantitative results. The teachers' beliefs, perceptions, and thoughts broadened the scope of the information available for the program evaluation. Overall, this utilization-focused program evaluation assisted the district in determining whether the goals of the PEP program were met by revealing what the math assessment data shows, exploring what teachers think about their students in relation to motivation, engagement, and self-regulation, and by finding out how students feel about the PEP program.

Table 1

Research Questions/Data Collection and Analysis Summary

Research question	Data collection tools	Data points yielded	Data source	Data analysis
RQ1 1a &1b	Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) database (student math assessment scores)	H_{01}: There is no statistical difference in math assessment scores after implementation of the PEP with all students. H_{A1}: There is a statistical difference with all students. H_{01a}: There is no statistical significant difference with military dependent students. H_{A1a}: There is a statistical significant difference with military dependent students. H_{01b}: There is no statistical significant difference with nonmilitary dependent students. H_{A1b}: There is a statistical significant difference with nonmilitary dependent students.	NWEA Measures of Academic Progress (MAP) website database	Quantitative data Paired sample *t*-test to determine whether the PEP goal setting program is effective with ALL students over a two-year period of scores. (1a) & (1b) Independent *t*-test to determine if the PEP goal setting program is effective with military dependent compared to the nonmilitary students.
RQ1,2,3,4,	Online voluntary teacher confidential questionnaire. 30 teachers in grades 3-5 at the only two elementary sites within the district.	RQ1=TQ1 RQ2=TQ2 RQ3=TQ3 RQ4=TQ5 on teacher questionnaire TQ6=general observation TQ7=areas of recommended improvement for evaluation purposes	Survey Monkey (online electronic questionnaire instrument)	Qualitative data from teacher questionnaire. Thematic analysis Coding of narrative, open-ended responses to determine emerging themes and patterns.
RQ5 5a & 5b	Confidential student survey results previously collected by district under study. Online voluntary teacher confidential questionnaire. 30 teachers in grades 3-5 at the only two elementary sites within the district.	RQ5=TQ4 Paper/pencil 4-point Likert scale confidential student survey. H_{01}: There is no statistical significant difference in the value of goal setting conferences between military-dependent and nonmilitary students. H_{A1}: There is a statistical significant difference.	County Office of Education (external evaluator will provide data on student satisfaction surveys	Quantitative data Number coding and mode score for all students. (5a) & (5b) Independent *t*-test to determine if there is a difference between the military dependent/nonmilitary groups. Qualitative data from teacher questionnaire. Thematic analysis Coding of narrative, open-ended responses to determine emerging themes and patterns.

In Section 2 of the research study, I cover the necessary components of the study's methodology and design used to address the research questions. The setting, sampling methods, data sources, and sampling strategies follow, including selection criteria, permission, and an explanation of the data analysis process and choice of instrumentation and measures. Next in this section I discuss the measures chosen to maintain validity and reliability of the research study, and I share limitations and ethical considerations, followed by the conclusion portion of Section 2.

Multi-Method Design and Approach

I chose a program evaluation model using Patton's (2008) utilization-focused evaluation model for the research study using a multi-methods approach for data collection. The purpose for choosing this particular evaluation model was to investigate information provided from teacher and student participants involved in the PEP goal setting process as a way to determine if the initial objectives of the PEP program were met.

Setting and Sample

The program evaluation took place at two elementary schools with a total enrollment of approximately 1,400 students from preschool to fifth grade within the Coronado Unified School District. Between the two elementary schools, approximately 45% of the elementary student population are military dependents, and both schools are close to several naval bases. Quantitative data consisted of student math assessment scores from standardized testing and pre-existing data from student engagement surveys administered by the San Diego County Office of Education (see Appendix B for the context description). Thirty teachers from grades 3 through 5 from the two elementary schools in the district of study were invited to participate in the teacher questionnaire to complete part of the qualitative pieces of the research study.

Permission

A Letter of Cooperation (see Appendix E) to the school district to obtain permission from the district office, the site administration, and the teachers participating in the voluntary study was completed. Additionally, a letter of invitation to teachers introducing the program evaluation study and informing teachers of the voluntary opportunity to complete a confidential online questionnaire was developed (see Appendix F). The teacher consent form included the background information of the study, a description of potential risks, the voluntary nature of the study, and a confidentiality statement for teachers. The consent form was located on the first page of the online teacher questionnaire.

Archival data of student math scores obtained in the study was gathered through normal educational practices that currently occur throughout the school year, so parent consent was not necessary when analyzing student scores from district assessments (Creswell, 2012; Walden, 2011). No student names or identifiers were used when listing assessment data. The student survey data obtained during the research study was also gathered during normal educational practices throughout a typical school year by the SDCOE, so outside parent consent was not necessary (Creswell, 2012). Routinely, teachers complete online confidential questionnaires throughout the year to provide the district with feedback on numerous topics. Existing standard operating procedures within the Coronado Unified School District are to send out confidential online questionnaires regularly to obtain teacher feedback and input throughout the year, which guides the direction for upcoming professional development and supports decisions on student programs. Teachers are accustomed to using SurveyMonkey to complete questionnaires as a standard practice within the district of study. Final results from the research study will be shared

with all participants and stakeholders involved in the PEP goal setting program (Bogdan & Biklen, 2007; Creswell, 2012).

District permission to conduct research was requested and approved (see Appendix D). I met with the district superintendent, received permission to access data, and perform the research study at both elementary schools within the school district. In alignment with the approval received from the Walden University Institutional Review Board (IRB) (approval number 12-21-15-0360127), appropriate procedures were followed in order to conduct the research within the district of study.

Data Collection Strategies

The utilization-focused program evaluation (Patton, 2008) was two-fold. First, the design of the program evaluation gathered information that allowed a determination to be made as to whether the PEP program met the intended objectives. The PEP goal setting program objectives include an increase in student math assessment scores and an increase in student motivation, engagement, and self-regulation. Second, the utilization-focused evaluation enabled the district stakeholders and an external evaluator to receive feedback from the teachers who are implementing the PEP program to make informed decisions and implement necessary changes to benefit and enhance the existing PEP program.

Qualitative and quantitative data was collected concurrently to provide a timely comparison and validate the results of each type of data (Driscoll, Appiah-Yeboah, Salib, & Rupert, 2007). Through a confidential questionnaire, teachers were able to provide information about what the goal setting process is like with students in their classroom. The online voluntary teacher confidential questionnaire on SurveyMonkey was made available for a convenience sample of 30 teachers total at two elementary sites within the district. There were only 30

teachers assigned to grades 3, 4, and 5 between the combined sites implementing the PEP goal setting conferences during the data collection process, so all 30 teachers were invited to participate in the voluntary questionnaire. A thematic analysis involving coding of narrative, open-ended responses was conducted through an excel spreadsheet to determine emerging themes and patterns in data.

In addition to the questionnaire, student math assessment data was collected concurrently from grades 3 to 4 and again from grade 4 to 5 to determine growth measures with all students as well as the comparison of the military dependent group and nonmilitary group. The math assessment data was obtained through the licensed NWEA MAP database contracted through the district using a username and password to access the numerical scores for the 3-year timespan. Further, the San Diego County Office of Education (external evaluator) provided data on student satisfaction survey from a 35-item Likert scale questionnaire. Number coding and mode score for all students were provided. An independent t-test was conducted to determine if there was a difference in math scores when compared between the military dependent and nonmilitary cohort groups for the student satisfaction survey. The concurrent data collection and analysis of the quantitative and qualitative results converged and crosschecked to ensure credibility of the study and are discussed in the findings section of the project study. For the quantitative data, SPSS software was used for paired and independent t-tests and spreadsheets were created to code teacher responses for the qualitative data. Both forms of data were collected simultaneously and compared to each other to provide a holistic snapshot of the PEP program in the district of study.

Role of the Researcher

The researcher's position as an elementary principal provides an insider role in the schools and district. The insider role benefits the purpose of this study because it allows the

researcher to know and understand the context of both elementary sites. The researcher's role as principal makes her an expert in the field because she is present every day at the school site to provide PEP goal setting support and resources to the teachers, students, and parents. Even though her role may have some undue influence on the results of the online confidential teacher questionnaire, appropriate steps were taken to separate the principal role from the researcher role.

As stated above, for the purpose of this research the role of the researcher was that of a doctoral student at Walden University. This role was separate from her role of administrator, which is outlined throughout all aspects of this research study. The researcher realized her role as principal could have added a level of concern to some teachers when invited to participate in the confidential online questionnaire, a fact which made the researcher aware of how important teacher input and feedback is for the purposes of this research. The administrative role as principal at the larger of the two elementary sites in the district enabled the researcher to retrieve pertinent information from the teachers through a confidential and voluntary online questionnaire, instead of through interviews, in the hopes of a greater response from teachers and a lower level of concern. The researcher evaluated the PEP goal setting program through a role separate from the principal role and was not a participant in the PEP goal setting program.

Data Analysis

The data analysis process for this program evaluation included the use of math assessment data, student survey results, and teacher responses from an online questionnaire. Through a multi-methods process, both quantitative and qualitative data were used in determining the effectiveness of the PEP goal setting program. Through the triangulation of the data results, the combination allowed for a trustworthiness research study and a decrease in bias

when only one type of research methods is implemented. Using both quantitative and qualitative data also creates a balance of perspectives which increases the validity and trustworthiness of the results.

Math assessment data. Each year, students in grades 2 through 5 across the district take MAP assessments 3 times per year in math. Students in grade 2 do not participate in goal setting conferences with their teachers, and therefore; were not included in this study. For the quantitative component of the data collection process, all students' MAP assessment scores from 3rd to 4th grade and from 4th grade to 5th grade were collected from 2013 to 2015 using the data from the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) reports database (https://reports.nwea.org). MAP math scores were listed first to reflect scores when the PEP goal setting program was initiated, followed by the scores at the end of each year from 2013 to 2015. The NWEA ensures reliability and validity of assessments by conducting pool depth analysis, comparability studies, and test validation across all tested populations (https://reports.nwea.org).

The extensive bank of student math questions on the MAP assessments have been developed over an extended period of time, which have allowed proper analysis to establish reliability. The MAP math assessment data is reported as a Rausch Interval Unit (RIT) score for each student, and it is a regular measuring scale for best results. A RIT score shows a student's instructional level in math compared to students at the same grade level across the nation (this is the normative group). Through the NWEA MAP website, a national mean score is calculated for each grade level, along with above and below average benchmarks. These indicators given in percentiles, thus allows teachers to compare each of their students to the national average.

District permission was granted and unlimited access given to school sites to perform routine data analysis on student RIT scores throughout the school year as a part of routine practice. Additional permission was received to obtain student assessment data for this specific research study by the district superintendent and director of curriculum.

MAP math scores were analyzed for the quantitative part of this multi-methods study. Two t-tests were conducted using the math assessment data to look for growth in scores over a two-year span for all students, followed by the military dependent student group in comparison to the nonmilitary student group. The first test, a paired sample *t*-test, compared assessment scores from 2013-14 and 2014-15 of all students to determine growth and find out if the PEP goal setting process is effective overall. The paired sample *t*- test was used to evaluate individual assessment scores from all current 5^{th} grade students from their 3^{rd} to 4^{th} grade year (Year 1 PEP) and from their 4^{th} to 5^{th} grade year (Year 2 PEP) looking for growth over the two-year period.

The second test, an independent *t*-test, utilized the math assessment scores from both years for the military dependent student group and nonmilitary student group to determine if the PEP goal setting program is effective with the military dependent students compared to the nonmilitary students. The independent *t*-test was used to determine if there is a significant difference in the mean scores between the two different student groups. If the two groups mean scores are not equal, the null hypothesis will be rejected and the alternative hypothesis will be accepted. A significance level (alpha) of 0.05 was set to accept or reject the alternative hypothesis.

Teacher online questionnaires. With a total population of 60 elementary teachers, a convenience sample of 30 teachers total from both elementary sites were invited to complete a

confidential online teacher open-ended questionnaire for the qualitative data collection portion of the research study (see Appendix G). Teacher participants were provided an explanation of the researcher's role as a Walden University student in the participant invitation letter and at the top of the online confidential questionnaire (Lodico, Spaulding, & Voegtle, 2010; Merriam, 2009).

Questions were carefully worded to ensure researcher was not able to deduce who participated based on responses. In other words, the questions did not ask teachers to disclose specific events or teaching methods that would be attributable to only them. No demographic data on the teachers was collected. The teacher questionnaire was field tested by talking with professionals (i.e., non-participating colleagues) in the district (i.e., stakeholders) who are not a part of the participant pool, but knowledgeable about PEP goal setting program. The professionals provided input about the nature and quality of items on the questionnaire and ensured questions were clear and aligned to the purpose of the program evaluation. According to Creswell (2012), open-ended questions allow the participant to answer based on their own contexts and experiences without the researcher being present. Further, the anonymity of the online questionnaire is a way to get candid data from teachers.

The administrative assistants at both elementary sites placed a hard copy of the letter of invitation (see Appendix F) into all grades 3-5 teacher mailboxes. The letter disclosed the researcher's separate roles as both administrator and as a doctoral student and contained the universal link to Survey Monkey where the online confidential questionnaire was located. Additionally, the administrative assistants at both sites emailed the universal link to the online questionnaire to the 30 teachers email addresses. An individualized link was not used since it could be considered an identifier. When teachers accessed the questionnaire, the consent form

was located at the top of the questionnaire and provided all of the details of the research study and participants rights.

The seven questions for the online questionnaire align with research questions 1, 2, 3, 4, and 5 for the purposes of evaluating the PEP goal setting process. The questions in the online teacher questionnaire were as follows:

1. How do you think the PEP process has impacted student achievement in math?
2. How does the PEP program affect student motivation in math?
3. How do you perceive the PEP goal setting conferences affect student engagement in math?
4. How do your students feel about setting goals?
5. Do you feel the PEP goal setting process has an impact on students' abilities to self-regulate their learning? Why or why not?
6. Give two or three observations that stand out in your mind when you think about the PEP process over the past three years.
7. Are there any improvements or changes to the PEP program you would suggest?

After teachers read the consent form, the seven open-ended questions were visible and teachers responded in each of the text boxes in a narrative format underneath each question. Teachers had access to the online questionnaire for two weeks. At the end of the two-week period, all narrative responses were gathered and analyzed. Through a thematic analysis, repeating patterns from teacher responses were recognized through open coding (see Table 2 for key phrases from thematic coding). The researcher searched for reoccurring words and phrases in teacher responses and entered into an excel spreadsheet. Axial and selective coding was then

completed on the excel spreadsheet to narrow down major themes, and categories developed from the coding process (Bogdan & Biklen, 2007; Castellan, 2010; Creswell 2012; Merriam, 2009; Patton, 2002). In order to retrieve the specific pieces of data needed to determine if the PEP goal setting program has met the established objectives, recurring regularities in the teacher responses were noted and how the responses compared to the overall student engagement surveys and student math data was reported (Merriam, 2009). For each teacher question, similar responses determined through the coding process were counted and percentages provided out of the total number of teacher participants with more in depth information provided in the findings section. Teacher participants read all of the comments from the questionnaire to provide trustworthiness of the data overall.

Student engagement surveys. Student engagement survey results from the San Diego County Office of Education (SDCOE) was the third data source for this research study. To determine whether students in grades 3, 4, and 5 felt satisfied with goal setting and are motivated to increase their performance levels, the SDCOE had all students voluntarily complete a survey at the end of each school year from 2013 to 2015. The SDCOE randomly selected 80 students total from grades 3-5 between both elementary schools. The experimental group of students was comprised of those students who took the survey all three years, participated in the PEP goal setting program, and were military dependent. The comparison group was comprised of the nonmilitary students who took the survey all three years and participated in the PEP goal setting program. The randomly selected matched cohort of students were in 3rd grade together in the 2012-13 school year, in 4th grade during 2013-14, and in 5th grade during 2014-15. Out of the 80 students, eight left the school district within the 2013-2015 period. Therefore, 72 student survey results were analyzed. In the confidential and voluntary student engagement survey (see

Appendix J), students answered 35 questions pertaining to student engagement and satisfaction by selecting from responses ranging from "not at all true" (A), "not very true" (B), "sort of true" (C), "very true" (D). The Likert-scale data were used to calculate the means for the survey questions. Average survey response scores for both student groups were compared. A higher survey score indicated student readiness to learn was higher, meaning that students are taking charge of their learning. The responses were number coded and a mode score was determined. An independent *t*-test was conducted to determine if there was a difference in survey responses between the military dependent and the nonmilitary dependent student group.

Combining math assessment scores and teacher responses with student surveys allowed for a greater interpretation and reliability for the research study (Merriam, 2009). Using the multi-methods approach also increased credibility to the research study overall. The math assessment scores, teacher responses from the online confidential questionnaire, and SDCOE student satisfaction survey results, align to the relevant research questions and the hypothesis (see Table 1). The information collected from these three types of data allowed for a thorough evaluation of the PEP program.

Instruments and Measures

The selected instruments and measures chosen and listed below align to the research questions in this program evaluation to provide useful and meaningful data in order to answer the research questions that determine the effectiveness of the PEP goal setting program.

- Paired sample *t*-test. Utilizing math assessment data from the same students over a two-year period to determine if the PEP goal setting program is effective for all students by analyzing scores to look for growth from 3rd to 4th grade (Year 1), and from 4th to 5th grade (Year 2).

- Independent *t*-test. Utilizing math assessment data to determine if the PEP goal setting program is effective for the military dependent group in comparison to the nonmilitary group using the year-end assessment score on each student from 3rd to 4th grade (Year 1), and a second assessment score on each student from 4th to 5th grade (Year 2).
- Online confidential questionnaire for teacher reflections on PEP goal setting program.
- Number coding and mode for the SDCOE student survey 4-point Likert-scale followed by an independent *t*-test to determine if there are different responses between the military dependent and the nonmilitary group of students.

For the quantitative portion of the data collection, the paired sample *t*-test determined if the PEP goal setting process is effective, in general, for all students. The independent *t*-test determined if there was a significant difference between the military dependent and nonmilitary student groups. Narrative responses from the teacher questionnaire were coded for themes and patterns. The reason for choosing a teacher questionnaire was to gather teachers' ideas, feelings, thoughts and beliefs in regards to the student motivation, engagement, and self-regulation because of participating in the PEP goal setting program for the qualitative portion of the multi-methods data collection. The teacher questions align to the purpose of the program evaluation to determine plans for the PEP goal setting program district-wide. Even though a low response rate is a limitation when trying to gather data by questionnaire, a 75% return rate through the voluntary, online option for teachers was expected. Eighteen of the 30 teachers completed the online questionnaire, providing a 60% participation rate.

Student survey results from the SDCOE Student Engagement Survey were number coded and the Likert scale data was summarized in the research study using the mode. Additionally, an

independent *t*-test to analyze the responses between the military dependent and nonmilitary student groups was conducted to determine if there is a difference in responses between the two groups.

By using student math assessment scores, student self-reporting survey results on student engagement, and teacher feedback and input through a confidential voluntary online questionnaire, the information gathered and analyzed resulted in a very thorough program evaluation on the PEP goal setting program for the district to use in determining next steps for the PEP program district-wide.

Limitations

Program evaluations for new programs such as the PEP goal setting program can be difficult to complete due to the preconceived bias that may exist with the participants. In this case, previously implemented programs that have failed or been successful may have influenced the teachers' responses. Additionally, limitations for program evaluations can include the data collection, time constraints, and an overall understanding of the program, in general (Fitzpatrick et al., 2010).

For the quantitative assessment data, validity and reliability indices associated with the math assessment data have been examined through the NWEA MAP computer program, which the district contracts with for trimester assessments in math and language arts. Both the paired sample *t*-test and the independent *t*-test results provided the information needed to determine MAP math growth over time with all students and between the two groups of students. For the qualitative portion of the data, the teacher responses to the questionnaire were examined for consistency with the math assessment data and student surveys to look for dependability and transferability of results through a thick description process. The thick description process

contextualized the information from the questionnaire responses so readers have detailed descriptions through quotes and researcher notes. Transferability was addressed thorough an explanation of setting and contexts for further research within other similar contexts and settings (Merriam, 2009). To promote reliability of this research study, a critical self reflection regarding bias, assumptions, and relationships was completed by journaling throughout this process.

To limit researcher bias, a peer-debriefer outside of the educational setting was utilized to examine all aspects of the data collection and analysis within the research study, such as math assessment data and congruency of emerging findings. Teacher participants were provided copies of the comments from the teacher questionnaire to show trustworthiness of the qualitative data. An internal evaluator review also took place. To maintain credibility throughout the research study, a researcher's log detailing the study's procedures and decisions was maintained to reflect the amount of time spent in the data collection process and to provide an audit trail. Quantitative and qualitative data were integrated in the study to provide a thorough report in order to conduct an accurate program evaluation for the district.

The San Diego Office of Education (SDCOE) was the external evaluator for this utilization-focused evaluation study. An outside source reviewed all data analysis to corroborate the conclusions. Data from the study is available for stakeholders and other researchers to review by request.

In regards to other limitations of the study, Coronado Unified School District is a very small district consisting of only two elementary schools. The researcher is the principal at Village Elementary School, which is the larger of the two schools with 940 students in TK-fifth grade and approximately 39% of military dependent students. Silver Strand Elementary School, the other school, is very small with less than 270 students in TK-fifth grade, and have 80%

military dependent students. Even though both schools are participating in the PEP program and were included in the program evaluation, there is potential to limit the transferability of results to other schools and districts because the population is so small and the military dependent population varies between the two elementary schools.

Due to time constraints within the program evaluation and respecting the potential risks to participants because of the researcher's administrative position as principal at Village Elementary, students and teachers were not observed during PEP goal setting conferences, nor were students and teachers interviewed. Teacher questionnaire results may be limited in validity as teachers may hurry through to complete the questionaire and may not give thorough or accurate responses. With questionnaires, it is sometimes difficult to get a high response rate creating a response-bias in the data (Bogdan & Biklen 2007). Self-reporting measures from the SDCOE student surveys could have possibly resulted in biased responses from students.

Findings

This utilization-focused program evaluation was created to determine if the program objectives and goals of increasing math achievement scores for military dependent students in grades 3-5 were met. This type of program evaluation was selected in order to deliver the information obtained from the data analysis to all stakeholders, determine potential areas of improvement within the program, and utilize the information to determine a future plan of action. The multi-method approach allowed for the collection and analysis of multiple types of data and determine, through the program evaluation, to determine if the Personalized Education Plan (PEP) goal setting program was effective in increasing math assessment scores. The paired sample *t*-test and independent *t*-test were used on student MAP math assessment scores to answer research question 1. The teachers' responses to the open-ended questionnaire (see

Appendix G) were used to answer research questions 2 through 4. The students' responses to the satisfaction survey were used to answer research question 5. Out of the 30 teachers invited to complete the questionnaire, only 18 teacher participants logged in to the online questionnaire, providing a 60% response rate. Fourteen teacher participants answered all seven questions. Two teachers (Teacher C and D) skipped questions 3 through 7. Teacher K skipped question 7. Teacher O skipped questions 2 through 7.

In general, the teachers' responses to the open-ended questionnaire about goal setting, motivation, and engagement aligned with the findings described in the literature review. The majority of teachers agreed that goal setting was an effective process to increase motivation and engagement in students. However, only five teachers out of the 18 teachers who responded to the questionnaire (Teacher A, B, F, J, and R) felt students increased self-regulation skills throughout the process.

Table 2

Teacher Responses from Questionnaire

TQ=RQ	Key words/phrases from teacher responses about students
TQ1=RQ1 TQ1: How do you think the PEP process has impacted student achievement in math? RQ1: Is there a change in math assessment scores after implementation of the goal setting conferences with all students?	"Encouraged, excited, focused, motivated, improved attitudes, culture of goal setting created, students take ownership, see their progress, enjoying creating their goals, created a mindset shift, not developmentally ready, no evidence PEP works, minimal impact, if at all"
TQ2=RQ2 TQ2: How does the PEP program affect student motivation in math? RQ2: How do teachers feel goal setting, conferences affect motivation of military dependent students in math?	"Seem to be more motivated, very excited, boosts motivation, healthy competition, work harder if there is a goal, better able to articulate their needs, difficult to determine, affects a small amount of students"
TQ3=RQ3 TQ3: How do you perceive the PEP goal setting conferences affect student engagement in math? RQ3: How do teachers feel goal setting conferences influence military dependent students' level of engagement in math?	"Team, more positive and engaged, conferences are very effective, feel listened to and important, if a lapse in reinforcement – students not engaged, students don't care, new employee, not familiar with PEP, no correlation, none"
TQ4=RQ5 TQ4: How do your students feel about setting goals? RQ5: How well do students value the goal setting conferences?	"Students are happy and have multiple suggestions, enjoy process, feel proud, positive attitudes and feelings, good, they see the value, too much of a challenge, necessary evil, difficult time understanding, developmentally beyond most students, process grows with maturity"
TQ5=RQ4 TQ5: Do you feel the PEP goal setting process has an impact on students' abilities to self-regulate their learning? Why or why not? RQ4: How do teachers feel goal setting conferences influence military dependent students' abilities to self-regulate in math?	"Gives students a focus, if goals allow student to attain achievement, shifts the mindset of the learner, circumstantial, no impact at all, don't make connection, students aren't that autonomous, students don't take advantage of PEP process, students are too young and need a lot of monitoring, the more mature the student, the better they self-regulate".
TQ6=General observation/Program Evaluation TQ6: Give two or three impressions/observations that stand out in your mind when you think about the PEP process over the past three years.	"Students are learning to take ownership, motivational tool, need clearly defined expectations, limited, inconsistent, lack of support from district, need better communication, students write what they think sounds good, need consistent follow through, individual conferencing is hard with large classes, improved test scores, has become routine, students need a lot of reinforcement to not compare scores to peers, kids like one-to-one conferences, it would be good to share how teachers are doing it, teachers need handy intervention resources"
	"PEP goals should be online, Google docs, less pressure, clearly defined expectations, training on how to have a PEP goal setting conference, need consistent, unified plan, specific time throughout the year to reassess and interview students"
TQ7=General observation/Program Evaluation TQ7: Are there any improvements or changes to the PEP program you would suggest?	

Research Question 1

RQ1: Is there a change in math assessment scores after implementation of the goal setting conferences with all students?

Research question 1 was designed to see if there was a change in math assessment scores after implementation of the goal setting conferences with all students. Quantitatively, in order to investigate this possibility, a paired samples *t*-test was conducted for hypothesis 1, where hypothesis 1 stated that there is a statistically significant difference in math assessment scores after implementation of the goal setting conferences with all students. Results of the paired samples *t*-test suggested that the average score among all students before PEP implementation (M = 207.50, SD = 10.36) was lower than the mean score among all students after PEP implementation (M = 224.70, SD = 11.38). The difference in means (M = 17.20, SD = 7.92) was statistically significant ($t = 35.629$, $df = 268$, $p < .001$). Alpha level was .05.

An independent samples *t* test was conducted for hypothesis 1a and 1b, where hypothesis 1a stated that there is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with military dependent students. Hypothesis 1b stated that there is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with nonmilitary dependent students. Results of the independent samples *t*-test suggest that the average after intervention score for military students (M = 226.16, SD = 12.15) is slightly higher than the average after intervention score for nonmilitary students (M = 223.88, SD = 10.87). However, the difference in means (M = 2.29, SE = 1.14) is not statistically significant ($t = 1.587$, $df = 267$, $p = 0.114$, $p > .05$). It should also be noted that the Levene's test for equality of variances was statistically non-significant for the independent samples *t*-test ($F = 0.719$, $p = 0.397$, $p > .05$).

For the qualitative data part, in the teacher online questionnaire, TQ1 is aligned to RQ1. TQ1 asks, “How do you think the PEP process has impacted student achievement in math?” All eighteen teachers responded to this question. One major theme from teacher responses to TQ1 reflected a positive impact in student achievement overall due to the implementation of the PEP goal setting program. Of the twelve teachers who responded positively to this question, Teacher A explained, “I believe that students are encouraged to take a look at their own expectations towards personal advancement and achievement in math”. Teacher D reported, “A personalized goal helps both the student and the teacher by creating a focus for both, and, in turn, a successful path can be planned out to achieve the goal”. Teacher J added, “Students are more aware of where they stand academically and have a greater understanding of their role in making progress”. Teacher K commented, “I think it has helped student achievement increase. The students take ownership of their goal and work harder to achieve them”. Possibly the two most positive comments for this question came from Teacher R who stated,

> I believe the PEP plans have made students more aware of their progress in specific goal areas. Students are able to utilize online resources better that are tailored to their needs. I believe it has created a mindset shift for students. Rather than their grade being seen as something “given to them” by a teacher, they now see their stake and responsibility in their own achievement.

Teacher P commented,

> I think students are very aware of what their PEP goals are in relationship to math. Without reminding students about their PEP or putting their PEP goal sheet in front of them, they are able to recall their goals because it is meaningful to them. In my opinion, students enjoy creating their PEP goal. When I have sat down with them one-to-one to

> brainstorm what area they want to focus on for their goal, I would say about 90% of students readily identify what area of math they need to focus on. Having created PEP goals with students for 3 years now, I have seen a shift in the focus of the goals. Instead of creating goals that solely focus on skills and tasks, I see some kids branching out and creating goals that focus on strategies and procedures. I think having a PEP goal in math brings a self-awareness to students, and my students are more reflective about how they are working toward their goals and what they need to do to get there.

Some of the teachers who felt the PEP process has had either no impact or a negative impact, commented in a variety of ways sharing an overarching theme of the students being too young and not understanding the direct link of how setting a goal and reaching it over time leads to better grades. Teacher F shared, “The PEP process has impacted students minimally, or not at all. In fact, for the most part, it’s nonexistent compared to other districts using the similar pedagogy”. Similarly, Teacher G commented,

> I do not think that the district has a standardized PEP process; therefore, I don’t feel that there is an accurate way to evaluate the impact on student achievement in math. However, I have seen an improvement in attitudes toward math when grouping students according to ability. Lower performing students are more willing to participate in class discussion, ask for help, and share their thinking with other students that they feel are on the same level as they are.

So, for the qualitative part of RQ1, the one prominent theme from teacher responses showed that the PEP program has a positive impact on student achievement and success for students in grade 3, 4, and 5. The smaller theme from coding responses to TQ1 showed some teachers feeling that the PEP program had no impact at all on student achievement and higher math scores and felt the

district needed to provide more support to teachers in order to implement the PEP goal setting program more effectively and efficiently.

Research Question 2

RQ2: How do teachers feel goal setting, conferences affect motivation of military dependent students in math?

Responses to teacher question 2, which aligned to research question 2, related to motivation, indicated that teachers agreed motivation increases when student go through the goal setting process for math, which ultimately affects math achievement. Investigation into the teacher responses from the questionnaire uncovered two major themes. The first theme was that teachers felt students were extremely motivated when they experienced growth toward meeting their goal. The second major theme from teacher responses reflected the excitement students showed when they reached their goal number in math, which motivated students to jump right into setting another goal. A few teacher responses had an underlying pattern of negativity about a lack of support from the district regarding the implementation of the conferences.

Teacher A explained, “When students are filling out initial PEP goal forms with me, they seem to be motivated about the strategies that will work for them and their class discussions about realistic goals and ideas are very passionate”. Teacher G shared, “I have seen more students motivated to go to their math class because of their goal. It motivates them to increase their score and when they see their scores, they are excited when they improve”. Overall, the majority of teachers felt that student motivation increased as a result of setting a math goal and the two major themes from the teacher responses showed that students were more motivated with the PEP program than without it. Teacher R shared,

> I feel students are motivated to perform and work harder to achieve their goals. They know their strengths and weaknesses and utilize resources appropriate to their needs. This is also dependent upon the teacher's perception of the PEP plan. It is student directed based on data. It is a place they are now, not an ending spot.

Even though the majority of teacher responses reflected one or both of the major themes for this research question, a few responses had underlying patterns of frustration about the length of time involved in conducting the conferences with students and the lack of support from the district.

Research Question 3

> RQ3: How do teachers feel goal setting conferences influence military dependent students' level of engagement in math?

Teacher responses to this question related to engagement and goal setting provided one major theme of an increase in student engagement when students are working on their math goals due to the PEP goal setting conferences. A few teachers did not feel the goal setting conferences affected student engagement and their responses had an underlying pattern of negativity about a lack of support from the district.

Of the 12 teachers that shared their thoughts on if the PEP goal setting conference process increased student engagement in math, Teacher A responded, "I believe it lets them realize we are a team. Each student has a different goal and I am willing to help guide them to their personal success. It allows a deeper understanding of where students are coming from mentally…..goals, fears, etc." Teacher P commented,

> When PEP goals are diligently used, I think engagement increases. Students easily remember their goals and know what they are working toward. When they think on this,

> they are more engaged. If there is a lapse in reinforcing the PEP goals verbally in class then students are not as engaged or focused on their goals.

A few teachers felt engagement was not affected when students set goals in math and. Teacher G stated,

> I have tried several different ways to conduct goal setting conferences, and students are just simply not engaged in them. They don't seem to care about them and they don't seem to see a correlation between goal setting and success. I don't think goal setting at an elementary level is developmentally appropriate. Most PEPs are done at the secondary level – sometimes at a middle school level, but rarely at an elementary school.

Even though there was a major theme from teacher responses feeling that student engagement increased as a result of the PEP goal setting conferences, there appears to be negative underlying feelings from some teachers that was expressed regarding the lack of time, support, and clear direction from the district.

Research Question 4

> RQ4: How do teachers feel goal setting conferences influence military dependent students' abilities to self-regulate in math?

Only a very few teacher responses reflected that students were able to self-regulate their learning because of the PEP gel setting conferences. An overwhelming theme of students being too young to show self-regulation abilities was made very clear in teacher responses to the question. Overall, teachers felt that goal setting conferences did not impact students' abilities to self-regulate in math at all. Teacher E, G, H, I, M, N, P, and Q felt that students were not developmentally ready to set goals and that students do not make a connection between setting goals and the ability to self-regulate their learning. Finally, teachers shared that students are not

autonomous. Teacher K stated, “yes and no”, and felt it was hard at this stage for kids to regulate how to increase their goal. Teacher L said, “it varied from student to student”. Teacher E stated,

> I do not think the PEP has an impact on students’ abilities to self-regulate their learning. Elementary students are not developmentally ready to put it all together. If goals are constantly in front of them, it might have more impact. Most of the time, it is out of sight, out of mind.

Teacher H responded, “No, most students don’t make the connection between what will happen by itself and what will happen because of their self-regulation and increased effort in school”. Of some of the positive comments, Teacher R shared, “Students are better able to articulate their needs and even search out opportunities to grow in their weaker areas. It definitely shifts the mindset of responsibility onto the learner”. Additionally, Teacher A commented,

> The high level learner is constantly looking for achievement and loves writing ways to keep them on top. However, I do not think that the PEP has an immediate impact on this student. I believe the PEP will become of great value as school becomes more challenging and the student will have the tools of setting personal study and achievement goals in place. The middle learner varies depending upon where they are on the bubble of success or failure. If the reminders to think about PEP goals are allowing that student to attain achievement the student will have more self-awareness towards the ideas he/she has listed for success. If the student is below the bubble, I think they view these goals as another school task. They want to achieve and will write goals down when asked to self-evaluate, but to put goals into action do not always show anything more than words to paper. This is the learner who hopefully will start to see little bites of achievement and understand the value in setting goals.

The major theme of students in elementary school not being developmentally ready to show self-regulating abilities coupled with a consistent underlying tone and pattern of overall lack of time, support, and a clear direction from the district was made apparent from teacher responses to this question.

Research Question 5

RQ5: How well do students value the goal setting conferences?

Research question 5 was designed to investigate how well students value the goal setting conferences. For the quantitative part of this research questions, the San Diego County Office of Education provided statistical analyses of the relevant data. Seventy-two students from two elementary schools completed a voluntary student satisfaction survey in 2013 while in grade 3 and again in 2015 at the end of grade 5. Of the 72 students in the study, 32 students were military dependent and 40 students were not. An independent samples *t*-test was conducted for hypothesis *01* and *A1* to investigate the tenets of research question 5 in order to see if there was a difference between military and nonmilitary students' survey responses and how they value the goal setting conference process. Hypothesis *01* stated that there is no statistical significant difference between the military dependent and the nonmilitary dependent students in how they value goal setting conferences. Results of the independent samples *t*-test suggest that the average student survey score for military students (M = 0.17, SD = 0.32) is slightly lower than the average student survey score for nonmilitary students (M = 0.22, SD = 0.22). However, the difference in means (M = 0.05, SE = 0.64) is not statistically significant ($t = 0.783$, $df = 70$, $p = 0.436$, $p > .05$). It should also be noted that the Levene's test for equality of variances was not statistically significant for the independent samples *t*-test ($F = 1.800$, $p = 0.184$, $p > .05$). Additionally, based on the student satisfaction survey results, both military dependent and

nonmilitary dependent students reported being happy and safe at school. The results further showed that students enjoy setting goals and watching their progress toward success. All students surveyed reported the enjoyment of learning math, and the appreciation of receiving individualized time with their teacher to set goals and talk about their next steps toward attaining their goal.

Between the 2013-14 and 2014-15 school years, the district of study undertook several actions district wide that were meant to increase student achievement, motivation, engagement, and self-regulation. The student satisfaction survey administered through the SDCOE was one way to provide information regarding how the students felt about learning, specifically in the areas of achievement, motivation, engagement, and self-regulation district. Gain scores were computed from the pre- and post-survey results. Each student's pre survey score was subtracted from his or her post survey score. Computing a gain score this way, allowed the researcher to control for individual differences in pre survey scores by measuring the post survey scores relative to each persons' pre survey score. One limitation of this approach is that it does not allow the research to control for difference between the two groups. However, a close examination of the data suggested few differences between the two groups existed.

For the qualitative part of RQ5, the teacher online questionnaire, TQ4 is aligned to RQ5. TQ4 is "How do your students feel about setting goals?" Teachers overwhelmingly reported that their students feel good and are excited to set goals in math which showed as a major theme with this question. Teachers G, H, L, and N reported their students do not like setting goals and that it means nothing to them.

Of the teachers who responded their students felt good about their accomplishments and were very excited to set goals and make progress, Teacher A responded, "They are always happy

to come up with multiple suggestions as a class and enjoy sharing their ideas of what they say works for them". Teacher E commented, "Students like to work toward a "number" but need considerable help in creating realistic, measurable, and achievable goals". Teacher K shared, "My students enjoyed it. We set whole class and individual goals. They really get into it. After we take the MAP test, they will continuously ask if they met the class goal". In addition, a Teacher M stated, "Most are serious and see the value in setting goals although they may not know just how to go about setting realistic outcomes. Teacher guidance is helpful and appreciated by the students". Of the four teachers that reported their students do not like setting goals or that the process means nothing to their students, Teacher G specifically responded, "They feel that it is a necessary evil. They don't like doing it. They don't understand the relationship between goal setting and test scores, and they usually do not put a lot of thought into the goals that they set". Teacher N just commented, "Indifferent".

In coding the teacher responses throughout each question and keeping track of how teachers responded to each question, the general underlying pattern appearing consistently throughout the entire teacher questionnaire was that of strong negatively with a small group of teachers. Mainly, the responses repeatedly stated patterns of lack of support, consistency, and time.

The data analyzed through the coding process on the spreadsheet discovered main themes of a successful feeling of student achievement, an increase in motivation and engagement, and students at the elementary level not being equipped to self-regulate their learning. Even though the general tone from the teacher responses indicated that the PEP goal setting program was a somewhat successful tool to support the increase of student math achievement scores, the repeated underlying patterns of lack of support, time, and resources need to be addressed and

several improvements made to the existing program in order to support continued implementation. The qualitative data analysis was completed using a detailed coding scheme. The analysis began by allocating a number to each response for each question. Each teacher was assigned a letter and responses were entered into a spreadsheet. Next, the information was linked to the research questions. Then, a summary and description of the responses were provided. The major themes and patterns that emerged from the teacher responses regarding the PEP program are reflected in Table 2.

In general, the following qualitative summary provides specific information shared by each of the teachers who completed the online questionnaire. Overall, based on the time logs, teachers participants completed the questionnaire within four to twenty-three minutes. Additionally, the major themes and patterns reported above are very apparent throughout the below specificity of responses from each teacher participant.

Teacher A responded to all questions and spent twelve minutes completing the questionnaire. The teacher had positive responses regarding the PEP and how it impacted student achievement and affected motivation, engagement, and self-regulation, but did note concerns with students having a fear of failure and possibly not meeting their goal. Teacher B spent four minutes answering all questions and shared that as a newer employee there were still many things to be learned about the PEP goal setting process but overall believed that the process gave students a focus and that students enjoyed setting positive goals. Teacher C only answered the first 2 questions and felt the PEP goal setting process positively affected the math achievement of students. Teacher C also commented, “students celebrate small successes toward reaching their goals and that boosts student motivation to stay focused in math”. Teacher D also only answered the first 2 questions and shared, “the personalized goal helps both the student and the

teacher by creating a focus for both, so a path can be planned out to achieve the goal". Teacher E answered all questions in five minutes and had overall very positive responses regarding the effectiveness of the PEP goal setting process. The teacher felt goal setting increased student achievement. Further, Teacher E saw an increase in motivation and engagement, but did not think that students were able to self-regulate their learning in math. Teacher F answered all questions over a 23-minute timespan. The teacher shared the PEP goal setting program has minimal impact on student achievement in math, facilitates little motivation in students, and feel there is limited to no district support at all.

Teacher G indicated there is no standardized PEP process across the district, however; did feel that there has been an improvement in student attitudes and perceptions in math. Further, the teacher stated, "students are either motivated or not and teacher impact has varied affects and students don't put a lot of thought into their goals." Teacher G also commented, "students say they will study more often and do their homework, but there is not usually a change in patterns and the students don't follow through". Teacher H felt competitive students will be more motivated and engaged, but the goal setting process is typically beyond most elementary age students. Additionally, the teacher shared, "students don't make the connection between the actual work and the goal." As far as what Teacher H thought about suggested improvements to the PEP program, he or she felt less pressure to complete the goal conferencing with students and more time for in class learning would be great. Teacher I felt some students may understand the goal setting culture, but that most just look at it as another piece of paper to fill out. Although, Teacher I shared students feel good once a goal is created, but it takes the teacher and the parent continuously monitoring the goal for it to be meaningful for the student. In addition, Teacher I strongly recommended the district adopt a mathematics curriculum to help support student

learning instead of teachers having to pull from a variety of resources to teach the standards. Teacher J felt that the goal setting conferences happen but then there is no follow through and that the process overall is not very organized. Setting goals with students make them more aware of where they are academically and they have a greater understanding of their role in learning. Teacher J has noticed more student personal ownership and responsibility of learning.

Teacher K believed the PEP goal setting program has had a positive impact on student math scores, motivation, engagement, and a good attitude toward math and goal setting. However, better teacher support and parent communication is needed. Teacher L shared that students get very excited to see their math scores increase, but feels it is a challenge for this age group and sees no direct correlation to engagement. Teacher M and N responses were slightly similar. Both teachers shared that students are all about the number they receive when they have completed testing and comparing scores. They felt students need reminders once goals are set and that it does create a focus for students, but that it takes an insurmountable amount of time out of the instructional day to meet with individual students. Additionally, if the activities provided align directly with the math goal, then students are more likely to be more motivated and engaged in the task. Teacher O felt the PEP process has not had an impact on achievement. Teacher P has seen a shift in the kinds of goals students create compared to three years ago. Goals that used to be more skills and tasks are now strategies and procedures. Further, Teacher P feels students are more motivated and engaged in math than before the PEP program was initiated, but feels there is a lack of follow through and consistency with the program. Teacher Q has seen no evidence of the PEP program increasing achievement and feels student interest and excitement rarely translates into real action. In addition, Teacher Q does not think students take advantage of the PEP program opportunities and felt the district is not supportive and there is a

lack of direction and clarity regarding the PEP program districtwide. Finally, Teacher R thinks students are able to better articulate their needs and search for areas in which to grow due to goal setting, but feels the teachers need a mathematics curriculum with stronger intervention materials instead of just having Compass Learning software tied to MAP. Goal setting should be completed on the computer instead of the hard copy format. The students would have easier access to their goals and would then have everything all in one place. Teacher R feels teachers, students, and parents would all have easy access to the student goals at any time but the district has not followed through on any consistent practice and there is no clear expectation for teachers.

Conclusion

The program evaluation provides information pertinent to determining next steps for the PEP goal setting program at two elementary schools within the district of study. Through a multi-methods approach, both quantitative and qualitative data was collected and analyzed to assist in completing the program evaluation under the guidelines set forth by Walden University's IRB board. The results of the study will assist all stakeholders in determining what the district's next steps will be for the PEP goal setting program.

Section 3 provides a detailed explanation of the project. The project is based on the outcome of the utilization-focused evaluation on the PEP goal setting program and whether or not the program supports military dependent students who are below proficient in math to increase their performance. The goal of the project was to formatively evaluate the current PEP goal setting program and inform district administration, teachers, students, and parents of the results in the study. The project provides recommendations for the PEP program as a continued intervention practice for future implementation. Section 3 provides an introduction to the project, a rationale for the project genre, a literature review to provide theory that guided and informed

the project, and a summary of implementation. After that, the project evaluation justification and outcome are provided, followed by implications including social change, and a conclusion to the section.

Section 3: The Project

A utilization-focused program evaluation was chosen for the project study to provide a meaningful and measurable outcome to the district of study for use in facilitating future decision making about the district-wide PEP goal setting program. In the program evaluation, the target subgroup was the below proficient math students in grades 3, 4, and 5 district-wide. The literature review in Section 1 provided a variety of research regarding military dependent students' frequent moves and the detrimental impact on math achievement (Bradshaw, Sudhinaraset et al. 2010; Coronado Unified School District, 2014; Cutuli et al. 2013; Parke & Keener, 2011; Thompson et al. 2011; United States Department of Commerce, 2014; United States Department of Defense Educational Agency, 2013). Student motivation, engagement, and self-regulation abilities diminish as students move up in grades from third to fifth (Heinlein & Shinn, 2000; Metallidou & Vlachou, 2010; Parke & Kanyongo, 2012). Research suggests early intervention, in a one-to-one setting, is more effective than teaching in a whole group setting for students below grade level in math (Adam, 2011; Johnson, 2008). Additionally, determining where students' gaps are in mathematical knowledge and skills efficiently then setting math goals will support achievement (Levpuscek & Zupancic, 2009; Magi et al., 2010).

Research findings supported the design of a project that would clearly explain the PEP goal setting program, as well as its connection between individualized goal setting conferences and student motivation, engagement, self-regulation, and achievement in math. A program evaluation was determined to be appropriate because to date no evaluation had been completed on the PEP goal setting program. The evaluation determined potential program improvements, strengths and weaknesses, perceptions, efficiencies, emerging ideas, and progress within the existing PEP goal setting program in the district of study. The program evaluation was designed

based on a utilization-focused model (Patton, 2008) to review the success of the PEP goal setting program and determine next steps for the district. The following six elements of a utilization-focused evaluation were used to determine the effectiveness of the existing PEP goal setting program: (a) a specific participant target group; (b) desired outcome of target group; (c) one of more indicators for the desired outcomes; (d) details of data collection; (e) how results are used; (f) performance targets.

The next section states a description of the project, summarizes the project goals, provides a rationale for selection of an evaluation report as the project genre, and presents additional analysis of current literature relating to goal setting, motivation, engagement, self-regulation, and student achievement in math. After that, this section concludes with a description of implementation plans, a project evaluation, and implications.

Description and Goals

The PEP goal setting program was designed to address students' unique individualized needs in the area of math for grades 3, 4, and 5. The PEP goal setting program was a component of the STEPS Project grant awarded to the district of study in 2012 by DoDEA. The grant was awarded to support intervention efforts for all students, but particularly focusing on the military dependent students. Many military dependent students were enrolling in the district of study below proficient in math (Coronado Unified School District, 2011). The district began the PEP goal setting program after analyzing math assessment scores and researching the benefit of individualizing learning paths for students so they could potentially be more successful and increase math achievement scores. Since the implementation of the PEP goal setting program, all students have benefitted from receiving math intervention through an individualized and small group process, but the program was never evaluated to determine its success and effectiveness.

The utilization-focused program evaluation was conducted using student math assessment scores, student survey results from the SDCOE, and teacher responses from an online questionnaire. The main PEP goal setting program objectives were to improve student math achievement for all students, provide individualized learning opportunities, and increase student motivation, engagement, and self-regulation in math. By measuring the PEP goal setting program through a utilization-focused evaluation, the findings of the program evaluation were used to determine if the PEP goal setting objectives were met in the district of study. The main goal of the project study was to determine if the PEP goal setting process was effective in increasing student achievement in math for both military dependent and nonmilitary groups. An increase in motivation, engagement, and self-regulation in math was also a goal in the project study. The evaluation report is available to be used as a tool to guide future decisions for the PEP goal setting program district-wide.

Based on the findings of the multi-methods program evaluation, the PEP goal setting program was shown to be an effective math intervention program based on the data analysis from the student math scores and survey responses. Teacher responses on the questionnaire were varied and suggestions for change and improvement plentiful. Twelve of the 18 teachers who completed the teacher open-ended questionnaire shared that the PEP goal setting program had a positive effect on students' assessment scores. Fifteen of the 18 teachers felt the PEP goal setting program affected student motivation in a positive manner. Twelve of the 18 teachers shared in some way that the PEP goal setting program positively affected student engagement. Finally, only five of the 18 teachers felt the PEP goal setting program had a positive impact on students' abilities to self-regulate their learning.

Rationale

The project genre selected to address the effectiveness of the PEP goal setting program was an evaluation report presentation of the results from the program evaluation to the governing board of the district followed by a question and answer session at a regularly scheduled district board meeting. The evaluation report, presented in a PowerPoint format, included a description of the PEP goal setting program, the background on the purpose of creating the program, the results from the program evaluation, and recommendations for future implementation.

The utilization-focused outcomes framework was used as a guide for the project study. The desired outcome was an increase in math assessment scores after participating in the PEP goal setting program, followed by an increase in motivation, engagement, and self-regulation as a result of having a PEP and participating in the goal setting conferences one-to-one with a teacher each trimester. The outcome criteria were the math assessment scores. The data collection included pre- and post-math assessment data, student results, and teacher responses from the open-ended questionnaire. The performance target was 90% of students showing an increase in MAP math assessment scores after participating in the PEP goal setting intervention program. The use of the program evaluation would determine if goal setting with students increased math achievement, motivated students to be successful, increased engagement, and supported students in self-regulating their individual growth and performance by communicating with teachers about student behavior. The district of study will be able to take the information from the program evaluation and determine the following:

- If the PEP program is serving the needs of the targeted population;
- New potential areas for training and professional development for teachers;
- Possible new insights for improving program from the classroom teachers;

- Areas for continued teacher dialogue and support;
- If the PEP program objectives were obtained;
- Whether or not the PEP program needs modifications, changes, or improvements;
- If the PEP program will continue or be terminated.

Review of the Literature

Math fluency is crucial if all students in the United States are going to reach proficiency (Smith, Marchand-Martella, & Martella, 2011). Major gaps in mathematical knowledge, coupled with constant below grade level math assessment scores for military dependent students, led the school district of study to implement a PEP for all students in math at grades 3, 4, and 5 (Fisher, Matthews, Stafford, Nakagawa, & Durante, 2002). In addition to the PEP program, the district of study began professional development in the areas of math misconceptions and mathematical mindset in 2014 to provide training and support for all elementary teachers in the new Common Core math philosophy. Focused on adhering to the eight Standards for Mathematical Practice published in the California Department of Education Mathematics Framework (2013), the district hired outside experts to support and guide elementary teachers in the transition from the previous state standards to the new practices which now require a deeper conceptual understanding (Holm & Kajander, 2012). The eight Standards for Mathematical Practice are: (a) Make sense of problems and persevere in solving them. (b) Reasons abstractly and quantitatively. (c) Construct viable arguments and analyze the reasoning of others. (d) Model with mathematics. (e) Use appropriate tools strategically. (f) Attend to precision. (g) Look for and make use of structure. (h) Look for and express regularity in repeated reasoning. The new math requirements require

students to show more than one way to solve a problem. Students are also expected to explain their process and reasoning behind their solutions.

The benefits of personalized goal setting in math was discussed in the primary literature review to the study and how it influenced student motivation, engagement, and self-regulation in math. An additional review of literature was conducted to further provide current research on math misconceptions, mathematical mindset, individualized learning, the importance of students being connected to their learning, and student monitoring.

Math Misconceptions

Several research studies have shown how a person feels about math is related to the levels of anxiety experienced when participating in math activities and tasks (Jameson, 2014; Lai, Zhu, Chen, & Li, 2015; Necka, Sokolowski, Moriah, & Ian, 2015). Belief regarding whether or not a person feels good at math has long-term implications (Jameson, 2014). Often adults will express they were not good at math when they were in school or that they did not like math. Holm and Kajander (2012) reported that teachers even make these same statements when it comes to teaching math to their own students. Further, teachers in the study shared they felt underprepared to teach math and experienced anxiousness at times when it came to teaching certain math topics.

The Mathematical Framework for the Common Core Standards (2013) was created to change the misconceptions about math, and it requires teachers to approach teaching math concepts just the same as they approach other subject areas . The new focus is more on the conceptual rather than the procedural fluency with more group discussion and the sharing of multiple strategies and solutions to word problems. Biases from teachers' own experiences as math learners when they were in school coupled with the experiences of teaching math can

sometimes lead to feelings about math that are misconceptions (Lai, Zhu, Chen, & Li, 2015). Currently, teachers are learning new approaches to mathematics that incorporate the eight Standards for Mathematical Practice as listed above. Teachers may no longer teach their students math the same way they learned in school, which included a large amount of time spent on rote memorization, procedures, and speed (Leung, 2013). There seems to be a widespread misconception that if a student is good in math they must be fast in completing the work. Other misconceptions are that there are only right and wrong answers, and that math only deals with numbers (Boaler, 2016). Mathematics incorporates reading and writing into solving real world problems and involves much more than just numbers and speed when completing a task (Boaler, 2016). As stated in the introduction of the project study, math is all around us and the connections to the real world need to be the foundation for teaching math in the classrooms of today.

Mathematical Mindset

Developing math students who learn to accept mistakes and learn from mistakes is the growth mindset approach embraced by the district under study. Mistakes are valuable and welcome in learning and learning is a process that takes time (Boaler, 2016). It is not about just getting the correct answer, but more about the process involved and the strategies used to get to the answer. In a growth mindset classroom, typically math norms are set up at the beginning of the year as a group. Boaler (2016) shared that the growth mindset classroom values struggle and failure, which is very different from the teaching and learning mindset in the past.

Additionally, teachers should not do mathematical thinking for their students and need to provide time for students to struggle through a math problem in order to support a growth mindset (Abiola & Dhindsa, 2011). When new ideas are presented to students, electrical currents

fire in the brain to connect synapses, which create new connections in learning, which allows the brain to grow and change (Abiola & Dhindsa, 2011; Woollett & Maguire, 2011). To set students up for success in math, teachers are encouraged to allow students to resubmit any work or tests, to allow group projects, and not include homework as a part of the math grade. Praising students for working diligently on a math project, concept, or problem, and pushing their thinking to the next deeper level builds stamina and grit in students' thinking, which is the foundation of what it means to develop a growth mindset, verses just telling them they did a great job and that they are smart (Boaler, 2016; Boaler & Sengupta-Irving, 2015).

Individualized Learning

Creating an individualized learning plan motivates students to want to reach their goals and feel success (Adams, 2011; Moeller, Theiler, & Wu, 2012; Pekrun, Elliot, & Maier, 2006). To ensure students understand their individual goal and what needs to be done to reach it, both the teacher and student track students' individualized learning pathways on their personal NWEA Compass Learning in math and adjust the goal, if necessary. Several studies show a connection between individualizing learning and increased achievement (Adams, 2011; Johnson, 2008; Yang & Taylor, 2015). For example, Abe, Iiogu, and Madueke (2014) performed a quasi-experimental study with 80 student participants from two public secondary schools in Nigeria to investigate the effectiveness of goal setting on academic performance. One school was the experimental group and received goal setting skills and the other school was the control group. The study consisted of the pre-intervention assessment, the intervention program, and the post-intervention assessment. The results of the study showed a significant difference in the posttest scores among the experimental group and the control group validating there is a significant

impact on goal setting skills and academic performance. The students who set goals, performed higher than the students who did not.

Davis (2014) stated that students benefit from receiving immediate feedback with personalized learning and look forward to tracking their own learning once they have set their goals. In the district of study, after students take a math assessment, the math software program instantly provides a personalized learning pathway for each student focusing on areas of needed growth. Students can see their progress toward curriculum completion from a pie chart in their learning path (Smith, Marchand-Martella, & Martella, 2011). Additionally, students are able to take a test when they finish a unit and do not have to wait on the rest of the class. The goal setting process provides many opportunities for students to be successful (Day & Tosey, 2011).

Further, as part of the goal setting process, teachers ask students to write down their feelings about math and discuss how important math is to them and how they use math in the real world (Locke, & Latham, 2002). As a result of the math goal setting conferences, teachers know students' mathematical dispositions at a deeper level and therefore have connections to each student that they otherwise would not have (Clark et al., 2014). In the current research, setting goals has proven to increase motivation, engagement, and self-regulation in students, which increases assessment performance (Abe et al., 2014; Adams, 2011; Johnson, 2008; Yang & Taylor, 2015). Further, when students feel that their teachers care about them and support them in their learning, they tend to set even higher learning goals (Allodi, 2010; Murdock & Miller, 2003).

Student Connectedness

As current research shows, students have a stronger desire to learn when they feel a connectedness to their learning and when the learning is meaningful. The PEP goal setting

program enables teachers to build relationships with students which increases the desire to learn, increases the connection that students feel with their teacher and their learning, and promotes confidence (Garn & Jolly, 2014; Martin, 2012; Meece et al., 1988). Adams (2011) shared that personalized learning goals set up students to compete with themselves and feel intrinsically able to succeed instead of being concerned with other student scores. Carolan, Weiss, and Matthews (2013) stated that being connected to the learning and having ownership of the work was one of the key factors in an increase in student achievement. Gurland and Glowacky's study (2009) revealed that when students are given a choice in their learning their desire to succeed increases drastically, even as they progress in grade levels. Student connectedness and focus in an activity become stronger as they gain knowledge which supports them in mastery of their goal (Dawes & Larson, 2011; De Castella, Byrne, & Covington, 2013; Liem, & Martin, 2012).

Meaningful and Active Participation

Several research studies have shown that rewards, feedback, and active, meaningful learning increase academic engagement. According to a study performed by Johnson (2008), academic achievement levels are much higher when students have choice and autonomy in a classroom setting. When students are invested in their learning, high levels of participation increase and overall achievement increases (Martin, Way, Bobis, & Anderson, 2015; Lam et al., 2012). Further, when students are able to work at their own pace based on their academic readiness from an initial assessment, their academic achievement levels are higher because the activities are tailored to the students' levels and are more meaningful based on their individual pathways (Robinson & Mueller, 2014). Jones' (2008) study further revealed that personalized learning increases student achievement due to a student's commitment to master the content and achieve the goal.

Student Monitoring

Studies by Mazloomi, Arabi, Mazloomi, and Ahmadi (2014), and Shores and Shannon (2007) revealed that students who have developed the ability to monitor their own progress are able increase their achievement levels in math. With the negative regard in our society about math, teaching students the strategies of how to self-monitor their thoughts about math is the key to an increase math achievement. Shores and Shannon's (2007) work states that the ability to monitor is varied by subject area; therefore, a student who learns successful monitoring strategies in math, may not necessarily be able to transfer those same self-monitoring strategies to language arts or social studies. Reading and writing are integrated into the new Common Core math so transferability of self-monitoring and self-reflection strategies across the curriculum is increased.

Pintrich and Zusho (2002) reported that students who were interested in a particular subject area were more likely to have higher achievement scores. The relationships between student connectedness to learning and the ability to monitor their own progress, Pintrich and Zusho found could also be present in the district of study, especially for math. Due to the district focus to support students who are below grade level in math, students create goals in math and meet with a teacher to reflect on the progress toward the goal each trimester. As students see progress toward their math goals over time, their monitoring strategies increase based on past successes, and they are more motivated to reach future goals. Accordingly, current research suggests that higher achieving students have stronger stamina as a result of their increased monitoring skills. There is an abundance of research in the areas of a connectedness to learning and students' abilities to self-monitor their progress when working to attain a goal (Mazloomi, Arabi, Mazloomi, and Ahmadi, 2014; Pintrich and Zusho, 2002; Shores and Shannon, 2007), but there is little evidence how self-monitoring and student goal setting in the classroom supports

learning and achievement. A study conducted by Jarvela, Jarvenoja, and Malmberg (2012) investigated the connection between self-monitoring and having a connectedness to learning by having 34 elementary students participate in a science activity online to determine whether or not students' self-monitoring strategies and meaningful learning were connected. Each time the students logged in, they would complete a reflection sheet. Each student was interviewed at the end of the study to find out more about their learning processes and self-monitoring levels. The interviews revealed that the highly motivated students had 69% positive and 31% negative answers and were more connected to their learning. The lower motivated students had the exact opposite, indicating that the highly motivated student group had higher self-monitoring strategies and were engaged in the online science activity for a longer period of time overall.

Perels, Dignath, and Schmitz's (2009), quasi-experimental study focused on self-monitoring strategies, goal setting, and achievement. The purpose of the study was to improve math achievement and self-monitoring strategies with sixth graders. The pretest/posttest-control-group design involved 53 sixth graders from two classrooms. One class was the control group and received math intervention. The other class was the experimental group and received math intervention and self-monitoring strategies. All students were taught how to reach long-term math goals and received goal diaries to keep track of their progress toward the math goals they created. The results showed both groups improved in math performance, but the experimental group showed a higher improvement in math overall.

The PEP goal setting program supports student achievement in math and enables students to set math goals and work toward attaining the goals throughout the school year. During the goal setting conferences, teachers discussed the importance of math achievement and explained what the student needs to do in order to meet the math goals. The PEP program focuses on

increasing student math assessment scores by generating an awareness of the importance of what it means to set a goal, how to achieve the goal, and what it feels like when the goal has been successfully achieved. By spending one-to-one time with students, teachers were able to devote individualized time to every student, thereby increasing students' connectedness to learning and engagement toward successful goal completion because the tasks were meaningful.

Program Evaluation

Program evaluations, as well as other types of research, are increasingly important in the field of education more than ever before, mainly due to the new Local Control Accountability Plan (LCAP) and Smarter Balanced Assessment Consortium (SBAC) state testing requirements that began in 2014. After completing the utilization-focused program evaluation, results were shared with all stakeholders, and the opportunities for positive social change were found to be plentiful. According to the student survey results, students felt validated and are increasingly mindful of their academic goals in math. Discussion regarding the expansion of goal setting in other academic subject areas was an initial possibility if teacher concerns from the questionnaire were addressed appropriately by the district. The results of the teacher questionnaire showed not all, but some teachers and students had a deeper understanding of teaching and learning by participating in the PEP goal setting conferences and seeing the results of the program. Based on teacher feedback and comments, it is not recommended to conduct PEP goal setting conferences at the Kindergarten through second grade levels at this time. The creation of a cumulative personalized student portfolio, which follows students throughout their educational career should begin later in the elementary grades based on teacher suggestions and recommendations.

Additionally, schools within the state and country could potentially adopt an intervention program similar to the PEP goal setting program, tailored more toward an individualized learning

model across all educational settings to support student achievement in math based on the findings of the program evaluation in the district of study. By specifically focusing on all at-risk sub groups including mobility sub groups, goal setting and continuous reflection on progress would be consistent from school to school, especially if other districts across the state and country implemented a similar electronic portfolio system that integrated a goal setting program into it. The personalized student portfolios provide up-to-date communication as well as a history of individualized student progress for teachers and parents to review. In the broader educational setting, an understanding of the long-term benefits of individualized goal setting needs to be sought out. All teacher preparation programs and educational professionals may benefit from learning about additional strategies to support military dependent and high mobility student subgroups even though, for the purposes of this study, there was no significant difference in performance between the military dependent and nonmilitary dependent groups of students.

The program evaluation brings a high level of attention to goal setting conferences and the need to support not just the military dependent subgroup, but also all students. The overall implications for positive social change from the evaluation include increased awareness of the effectiveness of student goal setting within the district of study, a greater understanding what teachers think about the PEP program, and the needs of both military and nonmilitary students below grade level in math.

Implementation

A list of recommendations and implementation suggestions were formalized into an evaluation report to be presented to students, teachers, parents, and district administrators. The purpose of the evaluation report was to summarize the data analysis gathered to determine the overall effectiveness of the PEP goal setting program for math at the elementary district level

and share the results of the evaluation with other districts who are seeking intervention programs for students below grade level in math. The evaluation report will be provided to the district of study to assist with future decisions regarding the PEP goal setting plans and to further support teachers who implement the program with each of their students in grades 3 through 5.

Potential Resources and Existing Supports

Potential resources for teachers in order to continue implementing the PEP goal setting conferences with students include professional development to align the practice across the district and standardize the procedures of an actual goal setting conference. The purchase, training, and implementation of a district adopted elementary math curriculum for teachers to further support intervention is also necessary. Video record master teachers conducting a goal setting conference and use as a resource for new teachers to the grade level or as a refresher for teachers at the beginning of each school year is also recommended. Clearly outlined expectations for conducting a PEP conference to support a consistent, unified plan of implementation across schools was highly requested by teachers throughout the feedback from the questionnaire.

Existing supports for teachers includes release days to provide time to collaborate with colleagues and prepare for goal setting conferences with students. Additionally, ongoing weekly grade level meetings provide opportunities for scholarly dialogue amongst teachers involved in the PEP goal setting program. Monthly dialogue as a staff to share ideas and best practices is also a current support provided by site administration. Information from the program evaluation report will provide additional opportunities to increase resources for students who are below grade level for future collaboration and planning. Finally, data gathered from the PEP goal setting evaluation can potentially warrant the hiring of additional credentialed teachers to support

smaller group instruction and lower student to teacher ratio even more, which would address some of the concerns noted in the teacher feedback and recommendations.

Potential Barriers

Potential barriers in releasing the information from the program evaluation report could include teachers not wanting to implement the PEP goal setting program in other academic areas due to the time involved in the current math goal setting conferences, which are one-to-one, take approximately 10 to 15 minutes per student, and are completed three times per school year. Additionally, there is not enough data to support the expansion of the PEP goal setting program, especially to students in grades TK-2 grade. Teachers in grades Kindergarten through grade 2 may not want to begin the PEP program for their students based on the responses from the teachers in grades 3, 4, and 5 on the questionnaire. The feedback from teachers regarding the PEP program, does not support expanding the program to other grade levels at this time for several reasons. Although it is not currently recommended, the district of study will need to decide whether the PEP program will continue in math only or increase the expectation of adding other academic subject areas based on the information provided in the evaluation report. It is strongly recommended the district increase release time for teacher planning and preparation for the current PEP program in math. If the program is expanded to other academic subject areas, it is recommended the district respond to the needs of the current program first. The increase in teacher planning and preparation time would result in an added expense on the district budget. At this time, expanding the PEP goal setting program to other subject areas is not recommended. The district of study should address the current teacher concerns before considering the expansion of the PEP program at this time.

Another potential barrier to the evaluation report was the lower than expected response rate of 60% from the teacher questionnaire. A 75% response rate was desired. Had more teachers responded, there would have been additional input, feedback, and ideas shared, potentially giving a more complete picture of overall teacher beliefs and attitudes regarding the PEP goal setting process. Even though 18 teachers accessed the online questionnaire, teachers A and B skipped questions 3 through 7. Teacher K skipped question 7. Teacher O skipped questions 2 through 7. Conducting a focus group with an outside evaluator could be a potential solution to engage the teachers in a dialogue to increase participation and feedback about PEP goal setting. Another potential solution to support the current PEP goal setting program could be to increase teacher release time by adding extra early release days into the academic calendar at the beginning of the school year to support preparation and planning.

Implementation and Timetable

Supporting students below grade level in math is a priority in the district of study and immediate actions to continue providing timely intervention in math are required in order to increase student achievement. The program evaluation report, which includes findings and recommendations, was provided to the San Diego County Office of Education and the district of study upon completion.

Roles and Responsibilities of Student and Others

The roles and responsibilities of the researcher involved designing the program evaluation for an existing PEP program not yet evaluated in the district of study, requesting permissions to perform study, and researching information surrounding goal setting, intervention, motivation, engagement, and self-regulation. Additionally, the researcher was responsible for collecting and analyzing data for the program evaluation on the PEP goal setting

program in math. The research questions were aligned to the types of data collected, the collection instruments, and directly paralleled with the study problem and purpose for the utilization-focused program evaluation.

The potential 30 teacher participants were invited by email to complete an online questionnaire consisting of seven open-ended questions regarding the PEP goal setting program. The email invitation included a brief explanation of the project, a sample question, potential risk factors, and clarified the separate role of the researcher for the purposes of the study. Of the 30 teachers invited, 18 became teacher participants and responded to the set of questions. The teacher responses were logged in a codebook. All responses for each question were listed and themes generated from the responses. The researcher looked for common answers, key words, and expression of same ideas within the teacher participant responses as a way to develop coding frames, which required interpretation by the researcher and limited the number of connections initially discovered in the open coding process. After that, the researcher connected the major data themes back to the literature in the project study.

The students did not play a direct role in the project study; however, routine trimester student assessment data was collected and analyzed to determine if there was overall growth in math scores over time as the PEP process was implemented. Both the military dependent and nonmilitary dependent student groups were analyzed. Additionally, during the 3-year STEPS Project grant, students completed a voluntary survey during class time at the end of each school year that was created by the San Diego Office of Education. The survey results were reported to the researcher and the district of study at the end of the 3-year grant by the SDCOE external evaluator overseeing the entire DoDEA grant. The PEP program is a small component of the grant.

Implications Including Social Change

The PEP goal setting program evaluation results recommend the district of study make some significant changes to the program in order to support teachers with the on-going PEP process. Although PEP goal setting conferences did show to be an effective tool in supporting an increase in all students' math assessment scores over time, teachers felt the conferences were time consuming and students do not make the connection between setting a goal and increased math achievement. The majority of teachers who participated in the online teacher questionnaire felt that students' motivation to succeed and engage in task completion increased due to the goal setting conferences. However, teachers did not note a change in self-regulation overall. In fact, teachers E, G, H, I, M, N, P, and Q felt that students did not have the ability to self-regulate their learning after setting a math goal. Further, they shared that elementary students in 3rd through 5th grade were too young to be expected to self-regulate.

The PEP goal setting program has shown to be a somewhat successful intervention program that individualizes students' learning pathways and provides the necessary supports to below grade level students who have gaps and holes in their mathematical foundational skills. Since the initiation of the PEP program, students in grades 3 through 5 have shown an overall increase in math assessment scores, in general. So, it is fair to say that the PEP program supports the objective of closing the gap between high achieving and low achieving students. Although the results showed increased math assessment scores and positive overall student survey input, the teacher responses on the questionnaire were not much in support of the PEP program currently in place in grades 3, 4, and 5. Teacher questionnaire responses reflected underlying patterns of a lack of direction and support from the district. Further, teachers expressed the frustration of inconsistencies within the program and lack of user-friendly conference forms. The

district will need to reflect on this data and consider making some changes in order for the PEP program to continue in the district of study.

Far-Reaching

Supporting students below grade level in math is an issue that extends far beyond the perimeters of the district under study. Intervention programs to support student learning are ongoing throughout all districts across the state (California School Boards Association, 2013). The findings in the program evaluation may be used to assist other elementary schools in creating intervention programs tailored to goal setting and in creating an individualized learning path for each student. Furthermore, the evaluation report contains information that is beneficial to complementing existing intervention programs at elementary schools across the state and country. Improving the existing PEP program in the district of study, based on teacher input and recommendations, could result in a stronger, more solid intervention program that potentially can provide even greater results on a wider level for other districts to embrace. California's new eight state priorities (California School Boards Association, 2013) requires that every district in the state address student achievement and engagement in the district local control accountability plan (LCAP). Intervention support for students below grade level in any academic area must be provided to support achievement in learning overall. Although the district under study has provided an intervention plan for students by implementing the PEP goal setting program in math, expansion to all academic areas to support all students in need of support is the district's goal (C. Gallant, personal communication, November 3, 2015). The use of the PEP goal setting program creates positive social change by providing necessary supports to students in math so they are successful and become college and career ready by graduation. Early math intervention to close the achievement gap and strengthen math foundational skills for all students below grade

level is critical for students to achieve at high levels and compete in a mathematical global society.

Conclusion

Section 3 included an outline for the project. The utilization-focused program evaluation of the PEP goal setting program provided findings using student math assessment data from before and after the implementation of the PEP goal setting program, SDCOE student survey information, and teacher input and recommendations. Through the utilization-focused evaluation approach (Patton, 2008) the researcher looked at potential program improvements, strengths and weaknesses, perceptions, efficiencies, emerging ideas, and progress within the existing PEP goal setting program in the district of study. The utilization-focused outcomes framework using the six elements was used to determine the effectiveness of the current PEP goal setting program and was summarized in the evaluation project presentation. Additionally, the end of Section 3 discusses the possible implications of the project.

Section 4 includes a summary of the researcher's reflections regarding the project study. Strengths and limitations, followed by recommendations are discussed. Analysis as a scholar, practitioner, and project developer from the researcher is shared. Next, the impact on social change is follows. Section 4 concludes with a reflection of the importance of the project study and suggestions for future research based on the findings.

Section 4: Reflections and Conclusions

The purpose of the project study was to determine if the PEP goal setting program was an effective intervention in meeting the needs of the military dependent students below grade level in math at the elementary level. The district of study received a DoDEA grant to address the needs of the military dependent subgroup who were below proficient in mathematics and created the PEP program to respond to the need for greater intervention services to address the concerns. The PEP program provided opportunities for all students in grades 3 through 5 to participate in goal setting conferences with their teacher periodically throughout the school year to support student growth in academic achievement, while at the same time increasing motivation, engagement, and self-regulation in math. During the three years of the grant, the PEP goal setting program was never evaluated. Therefore, a program evaluation was necessary to determine whether the goal setting conferences made a difference in student achievement for both the military dependent and nonmilitary dependent student groups. Further, student motivation, engagement, and self-regulation were the theoretical foundation provided in this project study as an extension of the potential benefits of the goal setting process.

Military dependent students exhibited inconsistent skills and gaps in math and required foundational support in the areas of procedural and conceptual fluency (Coronado Unified School District, 2011). Ship deployment schedules from 2011 to 2014 for United States Navy Surface Force Pacific Fleet were reflected in the increase in the district mobility rate. Due to the prolonged and repeated deployments, elementary schools with the military dependent students experienced an increase in enrollment fluctuation. The increase of deployment activity significantly impacted the progress of the military dependent elementary age students, specifically in the area of math. The program evaluation findings resulted in a written report

presentation that provided recommendations for future PEP program implementation, several new communication opportunities between district administrators and site based teachers on what is needed to support student goal setting, and clearly defined expectations across the district. Performing a program evaluation on the PEP program has opened up a dialogue about the goal setting conferences between the district and teachers that did not exist before the evaluation. Selecting the types of data to be collected for the program evaluation, the data collections tools, and being able to analyze the data has been very fulfilling for me as a researcher and elementary principal.

Project Strengths and Limitations

The first strength of the project was the desire to address the military dependent student subgroup in the district of study when there was clear evidence provided by the district that military dependent students were below grade level in math compared to their nonmilitary dependent peers. Mathematics is the gatekeeper to success for students as they move through college and into a career, so early intervention is essential for students to succeed. The district wanted to address the inequity issue between the underperforming students and the students who are at grade level in terms of math performance and make it a priority of the district (Coronado Unified School District, 2012).

A second strength of the project was the presentation of the results to the school district, parents, students, and community members. The information provided at the presentation will be used by the school district and school board to determine the future direction of the PEP goal setting program at the elementary level.

A third strength of the program evaluation was the collection of both quantitative and qualitative data to gather a wide range of information to assist in making the most accurate report

possible. This was done as a way to give teachers and students a voice so that not just the numerical assessment data was driving the evaluation in the district of study. The PEP program is teacher driven, and having teacher feedback and input is critical in maintaining the integrity of the PEP program if it is to continue in the district (Creswell, 2012; Merriam, 2009; Love, 2009).

A fourth strength in the evaluation study was the theoretical foundation ties to goal setting and increased student motivation and engagement in learning. The connections and overlap in research regarding what factors affect achievement is significant. Johnson (2008) showed that teachers who offered more one-to-one student-teacher interactions met the developmental needs of students, thereby increasing motivation and engagement levels of students, which increased achievement overall in the classroom setting.

A fifth and final strength was the abundance of scholarly articles and evidence presented for the program evaluation. Several databases were utilized and multiple studies were found from many countries to present a thorough literature review concerning high mobility, goal setting, motivation, engagement, self-regulation, achievement, and intervention.

Even though the utilization-focused program evaluation was successful in determining recommendations for future PEP program implementation across the district of study, one limitation was the actual number of teacher respondents to the online questionnaire. Thirty teachers across the elementary district were invited to participate; however, 18 actually completed the questionnaire, which was an overall 60% response rate. Not all 18 teachers answered all seven questions, which limited the responses, but they were sufficient to provide the information necessary to conduct the program evaluation in its entirety.

An additional limitation to the project study was the limited number of responses mentioned above, which may have been because I am an elementary principal in the district.

Even though I clearly outlined the difference between my role as a doctoral student and a principal and took every precaution according to IRB, I feel some teachers may not have wanted to respond to the questionnaire no matter how confidential it was due to a feeling of vulnerability. A potential alternative to the study to increase teacher participation would have been to appoint an outside evaluator to conduct the program evaluation. As the PEP program is refined and expanded based on the findings of the program evaluation, additional evaluations should follow suit every few years for progress monitoring purposes.

Finally, an additional limitation to the program evaluation was that the project was designed to evaluate a program in a small, specific district. The narrow focus and data collection and analysis from a small district with a limited teacher response rate from the questionnaire may prevent generalization to other districts.

Recommendations for Alternative Approaches

A multi-methods approach was used in the study because the researcher believed that creating a qualitative and quantitative design to gather both types of data would result in a more well-rounded study. Alternative approaches to the study, such as a qualitative case study, could have provided additional in-depth information to guide the district in making a decision regarding the PEP goal setting process at the elementary level. A strictly quantitative approach, using a survey instead of an online confidential teacher questionnaire, would have limited the information shared in the open-ended teacher responses.

Scholarship

Scholarship development is the process of acquiring knowledge and using that knowledge to deepen the understanding of a process, situation, or program. The research process leading up to the program evaluation was very tedious from the beginning of the prospectus.

Learning how find, interpret, and analyze several different scholarly peer-reviewed journal articles that related to my area of research was a learning experience. Incorporating various articles from diverse perspectives and reviewing the literature until the saturation point was a true learning experience that led to a deeper understanding of what it means to present an accurate synthesis of current literature and research. The scholarship experience gained from the project study will be valuable to my position as an elementary principal and future curriculum and assessment director in a district of choice.

Part of scholarship is passing on the knowledge acquired. For the future scheduled district and site professional development dates, information and knowledge gained regarding goal setting, motivation, engagement, and self-regulation from the project study will be shared accordingly.

Finally, program evaluations in education can be used to improve an existing program or process, review current practices, or evaluate a new program. It is imperative that teachers always be a part of program evaluation in education. Teachers are the most influential for the student population at a school and are the ones who implement the programs and practices.

Project Development and Evaluation

The development of the project was a combination of processes involving contributions from many people in order to design and complete the program evaluation. Going back to the drawing board on a few occasions throughout the prospectus phase was a time consuming and iterative process, but a process that was critical to the development of the final project. By aligning the research questions with the types of data collection and analysis, it allowed for a smooth plan throughout the writing of the final two sections of the paper. The most important finding from the project study was the importance of collaboration when making decisions about

an education plan for students. The district administrators and teachers collaborating together to enhance or modify the PEP goal setting program is the key to maximizing student achievement in math district-wide. Teachers provided important feedback and ideas to improve the PEP goal setting process to the district of study for consideration. Change happens when collaboration between the teachers who are in the classrooms, the site administration, and the district occurs on a regular basis, and there is a commitment to the program being implemented. The project study brings to light the power of honest reflection, discourse, and commitment to student achievement.

Leadership and Change

The process of identifying a local problem, creating a literature review and choosing a theoretical foundation in response to the local problem, analyzing data, and then creating recommendations for change is a powerful experience. My doctoral journey has provided me with knowledge of the research process, which has led to positive change for the district of study. I now understand the process of the PEP goal setting program from the district, teacher, and student perspectives. I feel more capable and experienced to seek out the variety of elements of a situation before making a decision and have grown professionally as a result of the scholarly dialogue, research, and writing. I approach learning and leading in a more collaborative, collective effort than before I began the doctoral program. I plan to present the findings from the project study to the teachers and students at both elementary sites, as well as at the district level for administrators and parents. Performing a program evaluation on the PEP goal setting program in the district of study has enabled me to focus on a current intervention practice in math for below grade level students. To continue improving educational practices at the elementary level,

I look forward to using program evaluations as a tool to determine the effectiveness of programs and practices in the district of study.

Analysis of Self as Scholar, Practitioner, and Project Developer

A scholar is a person always in pursuit of knowledge and answers. A scholar is a person who never stops learning no matter how old. To be knowledgeable in a certain area of study can lead to becoming a scholar in that particular area, but the true meaning of being a scholar is when a person seeks out knowledge from other people who are scholars. After this doctoral experience, I feel that I am a scholar in the particular areas of curriculum, instruction, and assessment in the field of education. I gained considerable knowledge on the theories of goal setting, motivation, engagement, and self-regulation during the completion of this project study. I now feel equipped with a strong knowledge base as a scholar to move forward in implementing additional program evaluations on other district programs. Developing a project paper to present recommendations to the district on the PEP goal setting program to further support students below grade level in math was very gratifying for me. Putting appropriate structures and processes in place to support struggling students is a passion of mine. Completing the program evaluation using the teacher feedback and input through the questionnaires enabled me to experience a sense of deeper understanding of what they were experiencing with the whole process.

As a practitioner, I continuously apply what I learn in the field of education to my work as a principal in the elementary school and district. The ability to gather and analyze data to make research-based decisions to evoke improvements and refine teaching pedagogy is the true meaning of being a practitioner. In researching the multiple databases throughout the completion of the literature reviews, I was able to broaden my understanding of other researchers' viewpoints and gain multiple perspectives about current educational issues. As I began thinking

about the possible topics for my dissertation and what type of study it was going to be, I was not sure what it would become. I look back now and see the benefit of working with my chair and committee member to create a research project, which aligned questions with methods. I reflect on how different my study turned out compared to what I initially had planned. I feel I am a more effective practitioner in the field of education now because I use more data to drive my decisions regarding student achievement.

I remember attending my residency in Washington, D.C. in the middle of my second semester of my doctoral coursework. I was great at developing professional development for my elementary staff in the areas of curriculum, instruction, and assessment, so I did not think it would be a difficult process to develop a project for my doctoral study. During the residency, I spent a lot of time developing a problem statement and at the time, was not even sure how to explain the problem in the local setting. During the prospectus process, I was not sure how to find current literature to support my problem statement. After viewing many Walden webinars, reading many peer-reviewed journal articles, and reviewing other dissertations, I began to see and understand what my process would be. The professors at the residency were very helpful and encouraging to me. I returned home to San Diego with an iPad full of notes that were very helpful throughout the process. I also feel that the course professors prepared me well for the writing of the prospectus. I do not feel intimidated by research after this doctoral journey and actually want to do more research to benefit my local setting and positively impact social change on a bigger scale.

As a project developer and instructional leader at an elementary school, I lead monthly professional development meetings with my staff. Having had the benefit of reading several peer-reviewed articles on goal setting, motivation, engagement, and self-regulation throughout

my research journey, I am able to apply some effective strategies and techniques to motivate and engage the staff in the professional development. Additionally, as a staff, we have been working on what it means to be a self-regulated as a person, teacher, and what it means for a student. Goal setting has also become a much greater focus during professional development with the elementary teachers.

The Project's Potential Impact on Social Change

The project has potential to impact social change in the local setting. The program evaluation reviewed the effectiveness of the PEP goal setting program which was implemented to increase math proficiency for all students who were below grade level in math. The recommendations shared in the project presentation have the potential to make a positive change in the district of study for the PEP goal setting program. The district will potentially have the benefit of even a greater increase in student math performance if the district implements the suggestions and ideas from the teacher responses regarding the PEP goal setting program. Math intervention is not just a need in the local setting, but a need across the state and nation. The PEP goal setting program has proven to be somewhat effective, as shown in the student math assessment scores, student survey results, and teacher responses, but can be even more effective if the recommendations from the report are implemented to support the teachers in the process. However, with the difference in teacher attitudes about the PEP goal setting process, 15 minutes of individualized attention to conference with each student 3 times per year could potentially be spent in a more beneficial way in the classroom. Even though the program evaluation did not show clear, overall beneficial results, the idea of goal setting may entice other districts, no matter what their demographics are, to review their intervention practices and evaluate how they support students below grade level in math, through other goal setting measures.

A greater impact on social change is the process of putting the teachers' feedback, input, and suggestions at the forefront when making decisions about learning in education regarding student achievement. Districts regularly make decisions that impact the classroom and student learning without even enlisting the teachers in a collaborative effort to be a part of the decision making. Teachers have insider knowledge and are the closet to the students on a daily basis. If the teachers hard work in the classroom with students is not validated, positive social change is non-existent. It was clear through the program evaluation that the teachers are working hard, but not seeing the results or the student enthusiasm in the goal setting process. The recommendation for the district of study is to develop a clear, structured plan of support for teachers and to address the concerns and recommended changes brought forth to improve the current PEP program.

Implications, Applications, and Directions for Future Research

Several significant relationships emerged that could be potential areas of research in the future. Based on teacher comments from the questionnaire, at this time expanding the PEP goal setting program to students in grades Kindergarten through 2 is not recommended. Future research should include the observation of PEP goal setting conferences with students in grades 3 through 5. Additionally, conducting student interviews in an effort to get a more complete picture of the PEP goal setting process could be completed. Potentially having an external evaluator as a neutral person dialoging with the teachers who implement the PEP goal setting program through a focus group may lead to a better understanding of teacher attitudes in an open-ended questionnaire. Future analysis could include variables such as male, female, and other student subgroups may reveal important trends that would potentially encourage researchers from other disciplines besides education to engage in scholarly dialogue and create

additional ways to support students performing below grade level. Meeting with the military dependent families to learn more about what they need in addition to math support, before setting academic goals might guide the teacher in better understanding the military dependent student. Based on the information provided by the military dependent families, counseling might be a better direction for future funding instead of expansion of the PEP program. Additionally, further research into student engagement using interest theory would generate a variety of approaches to benefit student learning in the classroom.

An additional area of future study could also include collecting data on military dependent students' performance in other academic areas and in other districts close to military installations. Researchers could focus on other types of data collection for math goal setting intervention programs in the future, such as a focus group comprised of parents to gather more information on their knowledge and perceptions of the PEP goal setting program.

One final area recommended for future study is in the professional development that is required to support new teachers hired and current teacher areas of refinement with the PEP goal setting program. Since all teachers are at different levels of experience and knowledge of the PEP process, sending out a pre-survey to ask teachers what type of training they need on the PEP program would be beneficial. A pre-survey could inform a differentiated professional development plan for the elementary district. After all professional development is completed, teacher reflections to check for effectiveness would be gathered and used in conjunction with the pre-survey data to do a study to determine the effectiveness of the PEP program professional development. At this point, additional teacher input should be welcomed to support the direction of the PEP goal setting program.

Overall, the project study findings have numerous application considerations within the local setting and within the field of education.

Conclusion

Section 4 provided a summary about my reflections on the project study. It began with sharing the project strengths and limitations, followed by scholarship, project development and evaluation. I explained how my role as a scholar, practitioner, and project developer has changed throughout this project study process. After that, the impact on social change from the completion of this project study was discussed. Finally, implications, applications, and areas for future research followed suit.

In conclusion, the utilization-focused program evaluation showed the PEP goal setting program as an effective program in increasing students' academic achievement over a two-year period in math whether below grade level or not. However, while the PEP program was validated to be successful in increasing academic achievement, there were areas of weakness. As a result of the program evaluation, refinements were recommended in order for the program to be more effective in supporting student learning. The most valuable part of the data collection was the teachers' input, feedback, and recommendations for the PEP program. The research collected for the project study collectively reflected the teacher as having a strong impact on student achievement and success. Therefore, understanding what teachers need, finding out what teachers feel, supporting teachers with release time, and providing timely, effective professional development are all actions that need to occur to increase overall student success in the classroom. I found the value in reviewing and evaluating programs throughout the process of the program evaluation. I understand evaluation is a cyclical process in education, in general, to determine effective best practices for student achievement. As a change agent, leader, and

scholar, I believe the program evaluation created a positive social change in the district of study that can be carried out in other districts to support struggling students, while at the same time increase student motivation, engagement, and self-regulation through the goal setting process. My personal growth experiences have been far more rewarding than I thought they would be. I look forward to continuing the scholarly dialogue and collegial conversations in my school district to create opportunities for students to thrive and be successful through a collaborative effort between teachers and the district administration.

References

Abe, I. I., Iiogu, G. C., & Madueke, I. L. (2014). Effects of goal setting skills on students' academic performance in English language in Enugu Nigeria. *New Approaches in Educational Research, 3*(2), 93-99.

Abiola, O., & Dhindsa, H. S. (2011). Improving classroom practices using our knowledge of how the brain works. *International Journal of Environmental & Science Education, 7*(1), 71-81.

Adams, C. (2011, July). Student learning plans provide motivation, focus for college. *EdWeek*, reprinted by the Rennie Center for Educational Research & Policy. Retrieved from www.renniecenter.org/news/110701EdWeekStudentLearningPlansProvideMotivation.html

Allodi, M. W. (2010). The meaning of social climate of learning environments: Some reasons why we do not care enough about it. *Learning Environment Research, 13*(2), 89-104. doi:10.1007/s10984-010-9072-9

Beecher, M., & Sweeny, S. M. (2008). Closing the achievement gap with curriculum enrichment and differentiation: One school's story. *Journal of Advanced Academics, 19*(3), 502-530. Retrieved from http://joa.sagepub.com/

Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Boston, MA: Allyn & Bacon.

Boaler, J. (2016). *Mathematical mindsets.* San Franscisco, CA: Jossey-Bass.

Boaler, J., & Sengupta-Irving, T. (2015). The many colors of algebra: The impact of equity focused teaching upon student learning and engagement. *Journal of Mathematical Behavior*. Retrieved from http://dx.doi.org/10.1016/j.jmathb.2015.10.007

Bradshaw, C. P., Sudhinaraset, M., Mmari, K., & Blum, R. W. (2010). School transitions among military adolescents: A qualitative study of stress and coping. *School Psychology Review, 39*(1), 84-105.

Burns, M. K.; Klingbeil, D. A., & Ysseldyke, J. (2010). The effects of technology-enhanced formative evaluation on student performance on state accountability math tests. *Psychology in Schools, 47*(6), 582-591.

California Department of Education (2013). Mathematics Framework. Retrieved from http://www.cde.ca.gov/ci/ma/cf/mathfwchapters.asp

California Department of Education (2014a). CALPADS frequently asked questions. Retrieved from http://www.cde.ca.gov/ds/sp/cl/faq.asp

California Department of Education (2014b). LCFF frequently asked questions. Retrieved from http://www.cde.ca.gov/fg/aa/lc/lcfffaq.asp

California School Boards Association (2013). State priorities for funding: The need for local control and accountability plans. Retrieved from https://www.csba.org/GovernanceAndPolicyResources/FairFunding/~/media/CSBA/Files/GovernanceResources/GovernanceBriefs/2013_08_LCFF_Fact_Sheet-funding_priority.ashx

Carolan, B. V., Weiss, C. C., & Matthews, J. S. (2013). Which middle school model works best? Evidence from the early childhood longitudinal study. *Youth Society,* 1-24. doi:10.1177/0044118X13478625

Castellan, C. M. (2010). Quantitative and qualitative research: A view for clarity. *International Journal of Education, 2*(2), 1-14.

Clark, L. M., DePiper, J. N., Frank, T. J., Nishio, M., Campbell, P. F., Smith, T. M., Griffin, M. J., Rust, A. H., Conant, D. L., & Choi, Y. (2014). Teacher characteristics associated with mathematics teachers' beliefs and awareness of their students' mathematical dispositions. *Journal for Research in Mathematics Education 45*(2), 246-284.

Coronado Unified School District (2014). [Student information and achievement data.] Unpublished raw data.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research (*custom ed.) Boston, MA: Pearson Education, Inc.

Cruz, H. L & Zambo, D. (2013). Student data portfolios give students the power to see their own learning. *Middle School Journal*, *44*(5), 40-47.

Cutuli, J. J., Desjardins, C. D. & Herbers, J. E., Long, J. D., Heistad, D., Chan, C., . . . Masten, A. S. (2013). Academic achievement trajectories of homeless and highly mobile students: resilience in the context of chronic and acute risk. *Child Development, 84*(3), 841-857.

Davis, M. R. (2014, October). District's ambitious personalized learning effort shows progress. *EdWeek.* Retrieved from http://www.edweek.org/ew/articles/2014/10/22/09pl-districtprofiles.h34.html

Dawes, N. P., & Larson, R. (2011). How youth get engaged: Grounded-theory research on motivational development in organized youth programs. *Developmental Psychology, 47*(1), 259-269.

Day, T. & Tosey, P. (2011). Beyond smart? A new framework for goal setting. *Curriculum Journal, 22*(4), 515-534.

De Castella, K., Byrne, D., & Covington, M. (2013). Unmotivated or motivated to fail? A cross-cultural study of achievement motivation, fear of failure, and student disengagement. *Journal of Educational Psychology, 105*(3), 861-880.

DeFur, S. H. & Korinek, L. (2010). Listening to student voices. *The Clearing House, 83*(1), 15-20.

Driscoll, D. L., Appiah-Yeboah, A., Salib, P., & Rupert, D. J. (2007). Merging qualitative and quantitative data in mixed methods research: How to and why not. *Ecological and Environmental Anthropology, 3*(1), 20-28.

Fisher, T. A., Matthews, L., Stafford, M. E., Nakagawa, K., & Durante, K. (2002). School personnel's perceptions of effective programs for working with mobile students and families. *The Elementary School Journal, 102*(4), 317-333.

Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2004). *Program evaluation: Alternative approaches and practical guidelines* (3rd ed). Boston, MA: Pearson Education, Inc.

Garn, A. C., & Jolly, J. L. (2014). High ability students' voice on learning motivation. *Journal of Advanced Academics, 25*(1), 7-24.

Geary, D. C. (2011). Cognitive predictors of achievement growth in mathematics: A 5-year longitudinal study. *Developmental Psychology, 47*(6), 1539-1552. doi:10.1037/a0025510

Gottfried, A. E. (1985). Academic intrinsic motivation in elementary and junior high school students. *Journal of Educational Psychology, 77*(6), 631-645.

Gottfried, A. E., Marcoulides, G. A., Gottfried, A. W., Oliver, P. H., & Guerin, D. (2007). Multivariate latent change modeling of developmental decline in academic intrinsic math motivation and achievement: Childhood through adolescence. *International Journal of Behavioral Development, 31*(4), 317-327.

Grigg, J. (2012). School enrollment changes and student achievement growth: A case study in educational disruption and continuity. *Sociology of Education, 84*(4), 388-404.

Gurland, S. T., & Glowacky, V. C. (2011). Children's theories in motivation. *Journal of Experimental Child Psychology, 110*(1), 1-19. doi:10.1016/j.jecp.2011.03.013

Hake, R. (1998). Interactive-engagement vs. traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics, 66*(1), 1-26.

Heinlein, L. M., Shinn, M. (2000). School mobility and student achievement in an urban setting. *Psychology in the Schools, 37*(4), 349-357.

Holm, J. & Kajander, A. (2012). 'I finally get it!': developing mathematical understanding during teacher education. *International Journal of Mathematical Education in Science and Technology, 43*(5), 563-574.

Hudley, C., Daoud, A., Hershberg, R., Wright-Castro, R., & Polanco, T. (2002, April). *Factors supporting school engagement and achievement among adolescents*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Jameson, M. M. (2014). Contexual factors related to math anxiety in second-grade children. *Journal of Experimental Education, 82*(4), 518-536.

Jarvela, S., Jarvenoja, H., & Malmberg, J. (2012). How elementary school students' motivation is connected to self-regulation. *Educational Research and Evaluation: An International Journal on Theory and Practice, 18*(1), 65-84.

Johnson, L.S. (2008). Relationship of instructional methods to student engagement in two public high schools. *American Secondary Education, 36*(2), 69-88.

Jones, R. D. (2008). Strengthening student engagement. Rexford, NY: International Center for Leadership in Education.

McClelland, D. (1987). *Human motivation*. New York, NY: Cambridge University Press.

Kearsley, G. (1999). *Online education – Learning and teaching in cyberspace.* Belmont, CA: Wadsworth Publishing.

Killion, J., & Roy, P. (2009). *Becoming a learning school.* Oxford, OH: National Staff and Development Council.

Lai, Y., Zhu, X., Chen, Y., & Li, Y. (2015). Effects of mathematics anxiety and mathematical metacognition on word problem solving in children with and without mathematical learning difficulties. *PLoS ONE, 10*(6), 1-19.

Lam, S., Jimerson, S., Kikas, E., Cefai, C., Veiga, F. H., Nelson, B., & Zollneritsch, J. (2012). Do girls and boys perceive themselves as equally engaged in school? The results of an international study from 12 countries. *Journal of School Psychology, 50,* 77-94.

Lembke, E. S., Hampton, D., & Beyers, S. J. (2012). Response to intervention in mathematics: Critical elements. *Psychology in the Schools, 49*(3), 257-272. doi:10.1002/pits.21596

Leung, S. (2013). Teachers implementing mathematical problem posing in the classroom: challenges and strategies. *Educational Studies in Mathematics, 83*(1), 103-116.

Levpuscek, M. P., & Zupancic, M. (2009). Math achievement in early adolescence: The role of parental involvement, teachers; behavior, and students' motivational beliefs about math. *Journal of Early Adolescence, 29*(4), 541-570. doi: 10.1177/0272431608324189

Liem, G. A., & Martin, A. J. (2012). The motivation and engagement scale: Theoretical framework, psychometric properties, and applied yields. *Australian Psychologist, 47,* 3-13.

Locke, E. A. (1968). Toward a theory of task, motivation and incentives. *Organizational Behavior and Human Performance, 3*(2), 157-189.

Locke, E. A., & Latham, G. P. (2002). Building practically useful theory of goal setting and task motivation. *American Psychologist, 57,* 705-717.

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice* (custom ed.). San Francisco, CA: John Wiley & Sons.

Love, N. (Ed.). (2009*). Using data to improve learning for all: A collaborative inquiry approach.* Thousand Oaks, CA: Corwin Press.

Magi, K., Lerkkanen, M., Poikkeus, A., Rasku-Puttonen, H., & Kikas, E. (2010). Relations between achievement goal orientations and match achievement in primary grades: A follow-up study. *Scandinavian Journal of Educational Research, 54*(3), 295-312.

Martin, A. J. (2012). Motivation and engagement: Conceptual, operational and empirical clarity. In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 303-314). New York, NY: Springer.

Martin, A. J., Way, J., Bobis, J., & Anderson, J. (2015). Exploring the ups and downs of mathematics engagement in the middle years of school. *Journal of Early Adolescence, 35*(2), 199-214.

Marzano, R., Pickering, D., & Pollock, J. (2001). *Classroom instruction that works.* Alexandria, VA: Association for Supervision and Curriculum Development.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396. Retrieved from http://psychclassics.yorku.ca/Maslow/motivation.htm

Mazloomi, A., Arabi, P., Mazloomi, E., & Ahmadi, M. (2014). Effects of self-regulated-assessment learning strategies as learning and interacting with families on school achievement and self-concept math girls students in third grade. *Kuwait Chapter of Arabian Journal of Business and Management Review, 3*(11), 64-74.

McCarthy, M. & Kuh, G. D. (2006, May). Are students ready for college? What student engagement data say. *Phi Delta Kappan, 87*, 664-669.

McClelland, D. (1987). *Human motivation*. New York, NY: Cambridge University Press.

Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientation and cognitive engagement in classroom activities. *Journal of Educational Psychology, 80*(4), 514-523.

Metallidou, P., Vlachou, A. (2010). Children's self-regulated learning profile in language and mathematics: The role of task value beliefs. *Psychology in the Schools, 47*(8), 776-788.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation.* San Francisco, CA: Jossey-Bass.

Military Interstate Children's Compact Commission, MIC3. (2013). The Council of State Governments. Retrieved from http://mic3.net/pages/FAQ/faq_indexnew.aspx

Moeller, A. J., Theiler, J. M., & Wu, C. (2012). Goal setting and student achievement: A longitudinal study. *Modern Language Journal, 96*(2), 153-169.

Mullis, I. V. S., Martin, M. O., Foy, P., & Arora, A. (2012). TIMSS 2011 International results in mathematics. TIMSS & PIRLS International Study Center, Boston College. Chestnut Hill, MA. Retrieved from http://timss.bc.edu/TIMSS2011/international-results-mathematics.html

Murawski, W. W., & Hughes, C. E. (2009). Response to intervention, collaboration, and co-teaching: A logical combination for successful systematic change. *Preventing School Failure, 53*(4), 267-277.

Murdock, T. B., & Miller, A. (2003). Teachers as sources of middle school students' motivational identity: Variable-centered and person-centered analytic approaches. *The Elementary School Journal, 103*, 383-399.

Necka, E. A., Sokolowski, H., Moriah, L., & Ian, M. (2015). The role of self-math overlap in understanding math anxiety and the relation between math anxiety and performance. *Frontiers in Psychology, 6*, 1-12.

Ocak, G., & Yamaç, A. (2013). Examination of the relationship between fifth graders' self-regulated learning strategies, motivational beliefs, attitudes, and achievement. *Educational Science: Theory & Practice, 13*(1), 380-387. Retrieved from http://edam.com.tr/kuyeb/en/yazim_kurallari.asp

Paik, S., & Phillips, R. (2002). *Student mobility in rural communities: What are the implications for student achievement?* Retrieved from North Central Regional Educational Laboratory website: http://www.ncrel.org/policy/pubs/html/rmobile/index.html.

Parke, C. S. & Kanyongo, G. Y. (2012). Student attendance, mobility, and mathematics achievement in an urban school district. *Journal of Educational Research, 105*, 161-175.

Parke, C. S. & Keener, D. (2011). Cohort versus non-cohort high school students' math performance: Achievement test scores and coursework. *Educational research Quarterly, 35*(2), 3-22.

Patton, M. Q. (2008). *Utilization-focused evaluation* (4th ed.). Thousand Oaks, CA: Sage Publications, Inc..

Patton, M. Q. (2002). *Qualitative evaluation and research methods* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc..

Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology, 98*, 583-597.

Perels, F., Dignath, C., & Schmitz, B. (2009). Is it possible to improve mathematical achievement by means of self-regulation strategies? Evaluation of an intervention in regular math classes. *European Journal of Psychology of Education, 24*(1), 17-31.

Pintrich, P. R. & Zusho, A. (2002). The development of academic self-regulation: The role of cognitive and motivational factors. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation* (pp. 249-284). San Diego, CA: Academic.

Plowright, D. (2011). *Using mixed methods: Frameworks for an integrated methodology.* Thousand Oaks, CA: Sage Publications, Inc..

Poncy, B. C., McCallum, E., & Schmitt, A. J. (2010). A comparison of behavioral and constructivist interventions for increasing math-fact fluency in a second-grade classroom. *Psychology in the Schools, 47*(9), 917-930. doi:10.1002/pits.20514

Pool, J. L., Carter, G. M., Johnson, E. S., & Carter, D. R. (2012). The use and effectiveness of a targeted math intervention for third graders. *Intervention in School and Clinic, 48*(4), 210-217. doi:10.1177/1053451212462882

Robinson, K. & Mueller, A. S. (2014). Behavioral engagement in learning and math achievement over kindergarten: A contextual analysis. *American Journal of Education, 120*(3), 325-349.

Ruhl, K., Hughes, C., & Schloss, P. (1987). Using the pause procedure to enhance lecture recall. *Teacher Education and Special Education, 10,* 14-18.

Sengodan, V., & Iksan, Z. H. (2012). Students' learning styles and intrinsic motivation in learning mathematics. *Asian Social Science, 8*(16), 17-23. doi:10.5539/ass.v8n16p17

Shneiderman, B. (1994). Education by engagement and construction: Can distance education be better than face-to-face? *Retrieved November, 2, 2006.*

Shores, M. L. & Shannon, D. M. (2007). The effects of self-regulation, motivation, anxiety, and attributions on mathematics achievement for fifth and sixth grade students. *School Science and Mathematics, 107*(6), 225-236.

Skinner, E. A., Kindermann, T. A., Connell, J. P., & Wellborn, J. G. (2009). Engagement and disaffection as organizational constructs in the dynamics of motivational development. In K. Wentzel, A. Wigfield, & D, Miele (Eds), *Handbook of motivation at school* (pp. 223-246). New York, NY: Taylor & Francis e-Library/ Routledge.

Smith, C. R., Marchand-Martella, N. E., & Martella, R. C. (2011). Assessing the effects of the *Rocket Math* program with a primary elementary school student at risk for school failure: A case study. *Education and Treatment of Children, 34*(2), 247-258.

Smrekar, C. E. & Owens, D. E. (2003). "It's a way of life for us": High mobility and high achievement in department of defense schools. *The Journal of Negro Education, 72*(1), 165-177.

Smith, C. R., Marchand-Martella, N. E., & Martella, R. C. (2011). Assessing the effects of the *Rocket Math* program with a primary elementary school student at risk for school failure: A case study. *Education and Treatment of Children, 34*(2), 247-258.

Thompson, S. M., Meyers, J., Oshima, T. (2011). Student mobility and its implications for schools' adequate yearly progress. *Journal of Negro Education, 80*(1), 12-21.

U.S. Census Bureau (2002). *The big payoff: Educational attainment and synthetic estimates of work-life earnings.* Retrieved from https://www.census.gov/prod/2002pubs/p23-210.pdf

U.S. Department of Commerce, Economics and Statistics Administration (2014). Reason for moving: 2012 to 2013. Retrieved from http://www.census.gov/prod/2014pubs/p20-574.pdf

U.S. Department of Defense Educational Activity (2013). *Interstate compact on educational opportunity for military children*. Retrieved from http://www.dodea.edu/Partnership/interstateCompact.cfm

U.S. Department of Education, National Center for Education Statistics. (2011). *The nation's report card: Mathematics: 2011*. Retrieved from http://nces.ed.gov/nationsreportcard/pubs/main2011/2012458.aspx

Woollett, K., & Maguire, E. A. (2011). Acquiring "The knowledge" of London's layout drives structural brain changes. *Current Biology, 21*(24), 2109-2114.

Yang, Y. & Taylor, J. (2013). The role of achievement goals in online test anxiety and help-seeking. *Educational Research and Evaluation, 19*(8), 651-664.

Zhao, N., Valcke, M., Desoete, A., Verheaghe, J., & Xu, K. (2011). A multilevel analysis on predicting mathematics performance in Chinese primary schools: Implications for practice. *Asia-Pacific Educational Research, 20*(3), 503-520.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3-17.

Appendix A: Evaluation Report Project

A Program Evaluation of the PEP Goal Setting Program in Math for Students in Grades 3, 4, and 5

The purpose of a school system is to educate the whole child in a climate that is conducive to learning. Students from many different cultures and backgrounds attend school to learn and grow academically, socially, emotionally, and cognitively. Teachers and administrators have the responsibility of ensuring students are learning and thriving in the educational setting. School climate has a major impact on how students feel about coming to school (Allodi, 2010). Students are more inclined to actively participate in a classroom when they feel safe and accepted by the teacher no matter what their home life is like, resulting in a healthy learning environment and an increase in student achievement. A feeling tone in the classroom of respect and acceptance allows for learning barriers to disappear and results in higher learning. Research has shown when students know their teachers and administrators care about them, achievement increases because students are happier and they feel safer at school (Martin, Way, Bobis, & Anderson, 2015). Lam, et al. (2012), and Sciarra and Seirup (2008) found the school and classroom climate has a profound impact on students' levels of engagement and overall achievement in all facets of growth. When strong networks and support systems are put into place to meet the unique needs of all students, teachers are able to differentiate the delivery of instruction based on the ability levels of each student and provide additional intervention opportunities for all students below grade level in reading, writing, and math (Murawski & Hughes, 2009).

Teachers routinely instruct small guided reading and writing groups at differentiated levels and have multiple opportunities for partner reading, independent reading, choral or whole

group reading throughout the school day. When it comes to the academic subject of math, it is important that the same kind of structure and routine that happens for reading and writing also occur for math. Specifically in the academic area of math, the more small group and one-to-one attention a student receives, the stronger their self-concept becomes, which contributes to the increase in engagement and higher math competencies overall (Robinson & Mueller, 2014; Sullivan, Mousley, & Zevenbergen, 2005).

For the purposes of the project study, the current area of focus for the presentation is math performance and achievement at grades 3, 4, and 5 and the evaluation of the Personalized Education Plan (PEP) goal setting intervention program to support all students below grade level in math. The next sections of the presentation discuss the current issue in the district of study, shares results from the program evaluation, and provides recommendations for future consideration regarding the PEP program.

Program Purpose and Goals

Math fluency is crucial if all students in the United States are going to reach proficiency (Smith, Marchand-Martella, & Martella, 2011). Out of the 46% of military dependent students at both elementary schools, the average turnover rate is typically 37% district wide (Coronado Unified School District, 2012). Setting student academic goals provides a focus and increases the motivation for students to want to excel and met or exceed their set goal (Liem & Martin, 2012; Smrekar & Owens 2003). A coordinated effort to create a system within all school districts across the world to heighten the awareness and the commitment to the academic success of military dependent students is vital (Fisher, Matthews, Stafford, Nakagawa, & Durante, 2002). Just as districts focus on subgroups such as English Learners, socio-economically disadvantaged,

Hispanic, migrant, and students experiencing homelessness, military dependent (high transitory) students should also be a focus (Grigg, 2012).

Major gaps in mathematical knowledge coupled with below grade level math assessment scores for military dependent students led the school district of study to implement a Personalized Education Plan (PEP) for all students in math at grades 3, 4, and 5 (Paik & Phillips, 2002). In 2012, the district of study developed a Personalized Education Plan (PEP) goal setting program through a grant from the Department of Defense Educational Agency (DoDEA). During the 3 years of the grant implementation, the PEP goal setting program was never evaluated to determine the overall impact of the program on student achievement. The purpose of initiating the PEP program was increase math scores, motivate and engage students in math, and support students to self-regulate their goal setting progress toward success (Locke & Latham, 2002; Martin, 2012; Pekrun, Elliot, & Maier, 2006). Therefore, as a part of the research study, student achievement, motivation, engagement, and self-regulation were addressed within the program evaluation outcome.

The evaluation report is based on the outcome of the utilization-focused evaluation on the PEP goal setting program and whether the program supports military dependent students who are below proficient in math increase their performance.

The purpose of the evaluation report is to inform district administration, teachers, students, and parents of the results in the study. The report provides recommendations for the PEP program as a continued intervention practice for future implementation. The district of study will be able to take the information from the program evaluation report and determine the following:

- If the PEP program is serving the needs of the targeted population

- New potential areas for training and professional development for teachers
- Possible new insights for improving program from the classroom teachers
- Areas for continued dialogue and support
- If the PEP program objectives were obtained
- Whether or not the PEP program needs modifications, changes, or improvements
- If the PEP program will continue or be terminated

A multi-methods program evaluation was completed on the PEP Goal Setting Program in a district in southern California. This evaluation report provides a comprehensive summary of the findings of the program evaluation followed by recommendation to the district of study for future planning and implementation. The utilization-focused outcomes framework for the program evaluation was followed to optimize what the participant outcomes would be using the framework's six elements, which include the target group, desired outcomes, data collection details, how results of the program evaluation will be used, and performance targets (Patton, 2008).

Utilization-Focused Outcomes Framework Element	**Evaluation Details**
Target subgroup	Students in grades 3, 4, & 5 within elementary district
Desired Outcome	An increase in math assessment scores is the desired outcome. Additionally, an increase in motivation, engagement, and self-regulation through the goal setting process
Outcome Indicator	Student NWEA MAP math scores, SDCOE student survey results, and teacher responses from online open-ended questionnaire are the indicators which determine the outcomes.
Data Collection	The NWEA MAP math assessment scores were collected from before the implementation of the PEP goal setting process and again at the end of each year to look for growth in scores for all students. In addition, the assessment scores from the military dependent subgroup of students compared to the nonmilitary

	subgroup. Next, the SDCOE survey results show how students feel about goal setting. Lastly, the teacher responses from the online open-ended questionnaire will share information regarding student motivation, engagement, and self-regulation within the goal setting process and success with math.
Performance Target	90% of military dependent students will increase their MAP math assessment scores after participating in the PEP goal setting intervention program.
Use	The district of study will use the information from the program evaluation to determine: • If the PEP program is serving the needs of the targeted population • New potential areas for training and professional development for teachers • Possible new insights for improving program from the classroom teachers • Areas for continued dialogue and support • If the PEP program objectives were obtained • Whether or not the PEP program needs modifications, changes, or improvements • If the PEP program will continue or be terminated

Summary of Findings of Program Evaluation

The program evaluation was conducted using multiple sources of data which included student math assessment scores, student survey results from the San Diego Office of Education (SDCOE), and teacher responses from an online questionnaire. For the quantitative component of the data collection process, all students' MAP assessment scores from 3rd to 4th grade and from 4th grade to 5th grade were collected from 2013 to 2015 using the data from the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) reports database (https://reports.nwea.org). MAP math scores were listed first to reflect scores when the PEP goal setting program was initiated, followed by the scores at the end of each year from 2013 to 2015.

The research questions were developed to align with the purpose of the utilization-focused program evaluation on the PEP component of the STEPS Project. Many aspects of the background literature focus on the effectiveness of student goal setting in relation to motivation of students to achieve to proficient levels, the importance of engagement in learning, and self-regulation of one's own learning and achievement (Liem & Martin, 2012). Based on several scholarly sources and what is known about the PEP goal setting process for students that currently exists in the elementary schools in the Coronado Unified School District, the following research questions are appropriate in providing information that can be used to further define the future of the PEP goal setting program.

Research Questions (RQ)/Instruments (I)	Key Findings
RQ1: Is there a change in math assessment scores after implementation of the goal setting conferences with all students? 1.a. Military dependent students? 1.b. Nonmilitary dependent students? I: 1. MAP Math RIT scores from 2014 and 2015. 2. Teacher Questionnaire	H_{A1}: There is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with all students. Paired samples *t*-test showed mean score of 207.50 before PEP implementation and 224.7 after. H_{A1a}: There is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with military dependent students. Independent samples *t*-test for H_{A1a} showed a significant difference in math scores after PEP implementation. H_{A1b}: There is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with nonmilitary dependent students. Independent samples *t*-test for H_{A1b} showed a significant difference in math scores after PEP implementation. A combined percentage of 67.0% (n=12) of the 18 teachers reported that the PEP process has positively impacted student achievement. Five teachers reported they have not seen any impact on student achievement since the PEP program was initiated (28.0%, n=5). One teacher claimed to be unfamiliar with the PEP program (5.0%, n=1). A combined percentage of 89.0% (n=16) of the 18 teacher participants found the students to show an increase in motivation due to the goal setting conferences. One teacher participant did not feel that the goal setting conferences affected student motivation (5.5%, n=1). One teacher claimed to be unfamiliar with the PEP program (5.5%, n=1).
RQ2: How do teachers feel goal setting, conferences affect motivation of military dependent students in math? I: Teacher Questionnaire	A combined percentage of 66.0% (n=12) of the 18 teacher participants found the students to show an increase in engagement due to the goal setting conferences. Three of the teacher participants did not feel that the goal setting conferences affected student engagement (17.0%, n=3). Three teacher participants did not respond (17.0%, n=3). A combined percentage of 28.0% (n=5) of the 18 teacher participants found the students to show self-regulation strategies due to the goal setting conferences. Eight of the teacher participants did not feel that the goal setting conferences affected student self-regulation (44.0%, n=8). Two of

RQ3: How do teachers feel goal setting conferences influence military dependent students' level of engagement in math? I: Teacher Questionnaire	the teacher participants responded "it depends on the student" when it comes to the ability to self-regulate (11.0%, n=2). Three teachers out of the 18 teacher participants skipped this question (17.0%, n=3). A combined percentage of 61.0% (n=11) of the 18 teacher participants teachers reported their students feel good and are excited to set goals in math. Four teachers reported their students do not like setting goals and that it means nothing to them (22.0%, n=4). Three teachers out of the 18 teacher participants skipped this question (17.0%, n=3).
RQ4: How do teachers feel goal setting conferences influence military dependent students' abilities to self-regulate in math? I: Teacher Questionnaire	Results of the independent samples *t*-test on the student survey results performed by the San Diego Office of education suggest that the average student survey score for military students is slightly lower than the average student survey score for nonmilitary students. However, the difference in means is statistically non-significant.
RQ5: How well do students value the goal setting conferences? I: 1. Teacher Questionnaire. 2. SDCOE student survey	

A paired samples *t*-test was performed for research question 1 to determine whether or not there was an increase in math achievement for all students. Results of the paired samples *t*-test suggested that the average score among all students before PEP implementation was lower than the mean score among all students after PEP implementation and the difference in means was statistically significant.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before_PEP_Implementation	207.50	269	10.355	.631
	After_PEP_Implementation	224.70	269	11.382	.694

An independent samples *t*-test was conducted for research question 1 hypothesis 1a and 1b, where hypothesis 1a stated that there is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with military dependent students. Hypothesis 1b stated that there is a statistical significant difference in math assessment scores after implementation of the goal setting conferences with nonmilitary dependent students. Results of the independent samples *t*-test suggest that the average after intervention score for both student groups is higher. The military student group is slightly higher than the average after intervention score for nonmilitary students, but overall non-significant. Clearly, the math assessment scores for all students increased after implementation of the PEP goal setting program. Even though the research showed military dependent students arrive in the district of study below grade level in math (Coronado Unified School District 2012), over time, their scores increased toward grade level after participating in the PEP goal setting program.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
After_PEP_Implementation	Equal variances assumed	.107	.744	1.943	267	.053	2.704	1.391	-.036	5.443
	Equal variances not assumed			1.929	243.759	.055	2.704	1.402	-.058	5.465
Before_PEP_Implementation	Equal variances assumed	.009	.925	-.756	267	.450	-.963	1.273	-3.470	1.544
	Equal variances not assumed			-.753	247.395	.452	-.963	1.279	-3.481	1.556

The overall results from the teacher questionnaire supported research questions 1 through 5 and resulted in positive and negative feedback regarding the PEP goal setting program. Questions 6 and 7 on the teacher questionnaire helped determine the program objectives outcome focus. The questions were:

1. How do you think the PEP process has impacted student achievement in math?
2. How does the PEP program affect student motivation in math?
3. How do you perceive the PEP goal setting conferences affect student engagement in math?
4. How do your students feel about setting goals?
5. Do you feel the PEP goal setting process has an impact on students' abilities to self-regulate their learning? Why or why not?
6. Give two or three observations that stand out in your mind when you think about the PEP process over the past three years.
7. Are there any improvements or changes to the PEP program you would suggest?

Most teachers felt that setting goals with students increased motivation to want to work toward meeting the goal. Additionally, when a goal was met, the teachers believed that student motivation increased even more. The majority of teachers also felt student engagement in math increased when students could see their individual progress toward the goal. The data analyzed from the teacher responses indicated that the PEP goal setting program was an effective tool as related to motivation and engagement. On the contrary, 44% of teachers who completed the questionnaire felt that students either did not know how to self-regulate their learning or that they were too young to learn how to self-regulate. Although most teachers felt that students at the

elementary level are not able to self-regulate their learning, two teachers shared that some students showed self-regulation strategies and persevered to complete tasks in order to master their math goal. Teachers expressed concern with a lack of a clear, consistent format for the PEP program and encouraged the district provide guidelines and training on the expectations of the PEP goal setting process at grades 3 through 5. In addition, teachers recommended more release time and district support in order to keep the program.

In addition, the San Diego County Office of Education provided statistical analyses of the relevant student survey data. Seventy-two students from two elementary schools completed a voluntary student satisfaction survey in 2013 while in grade 3 and again in 2015 at the end of grade 5. Of the 72 students in the study, 32 students were military dependent and 40 students were not. An independent samples *t*-test was conducted to investigate the tenets of research question 5 in order to see if there was a difference between military and nonmilitary students' survey responses. The student survey results showed little difference between the military dependent and nonmilitary students in feeling safe at school and thinking their teachers are supportive. The student survey results are a key to the success of the PEP goal setting program. As research showed, if students do not feel safe at school and if they feel their teacher does not care about them, they will not have the motivation and engagement levels needed to be successful. Teachers have a great impact on a student's success in the classroom. The relationship and individualized time between the teachers and students is critical, which is one of the main reasons the PEP goal setting program was designed for teachers to meet one-to-one with every student in their classroom to review goals in math at least three times each year.

Initially, the current program evaluation focused on goal setting conferences and the need to support the military dependent subgroup with the multiple relocations they experience in their

educational careers. After the data analyses was completed showing no significant difference in performance between the military dependent and nonmilitary student groups, it was clear the program benefitted military and nonmilitary students overall in the areas of achievement, motivation, and engagement. The overall implications for positive social change from the evaluation include increased awareness of the effectiveness of student goal setting within the district of study, a greater understanding what teachers think about the PEP program, and the needs of both military and nonmilitary students below grade level in math.

Recommendations

The following is a list of recommendations for the district of study as a result of the program evaluation.

1. Provide district wide professional development to standardize the procedures of a goal setting conference.
2. Video record master teachers conducting a goal setting conference and use as a resource for new teachers to the grade level or as a refresher for teachers at the beginning of each school year.
3. Provide time for teachers to collaborate with colleagues and prepare for goal setting conferences with students through release days.
4. Provide substitute teachers to support the management of the classrooms while teachers conduct conferences.
5. Conduct weekly grade level meetings to provide opportunities for scholarly dialogue amongst teachers involved in the PEP goal setting program.

6. Continue monthly staff dialogue sharing ideas and best practices lead by site administration.
7. Keep the PEP goal setting program at grades 3 through 5 only.
8. Continue only doing the PEP goal setting program for the academic area of math.

Conclusions

The program evaluation validated the PEP goal setting program objectives have been somewhat successful in supporting student learning and increasing math assessment scores. The PEP program is serving the needs of the targeted population of students, however; the teacher feedback from the questionnaire strongly indicates the need for more time, training, and support if the PEP program is going to continue. The report recommended potential areas of needed change in order to continue to have teacher buy-in and support. The report recommends the district develop a clear plan for teacher professional development. Teachers' input and suggested recommendations for improving the program were noted. In coding the teacher responses throughout each question and keeping track of how teachers responded to each question, the underlying pattern appearing consistently throughout the entire teacher questionnaire was that of strong negatively with a small group of teachers. At this point, it will be up to the district of study to decide if the PEP program will continue with the added supports recommended or be terminated based on the results in the evaluation report.

References

Allodi, M. W. (2010). The meaning of social climate of learning environments: Some reasons why we do not care enough about it. *Learning Environ Res 13,* 89-104.

Fisher, T. A., Matthews, L., Stafford, M. E., Nakagawa, K., & Durante, K. (2002). School personnel's perceptions of effective programs for working with mobile students and families. *The Elementary School Journal, 102*(4), 317-333.

Grigg, J. (2012). School enrollment changes and student achievement growth: A case study in educational disruption and continuity. *Sociology of Education, 84*(4), 388-404.

Lam, S., Jimerson, S., Kikas, E., Cefai, C., Veiga, F. H., Nelson, B., & Zollneritsch, J. (2012). Do girls and boys perceive themselves as equally engaged in school? The results of an international study from 12 countries. *Journal of School Psychology, 50,* 77-94.

Liem, G. A., & Martin, A. J. (2012). The motivation and engagement scale: Theoretical framework, psychometric properties, and applied yields. *Australian Psychologist, 47,* 3-13.

Locke, E. A., & Latham, G. P. (2002). Building practically useful theory of goal setting and task motivation. *American Psychologist, 57,* 705-717.

Martin, A. J. (2012). Motivation and engagement: Conceptual, operational and empirical clarity. In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 303-314). New York, NY: Springer.

Martin, A. J., Way, J., Bobis, J., & Anderson, J. (2015). Exploring the ups and downs of mathematics engagement in the middle years of school. *Journal of Early Adolescence, 35*(2), 199-214.

Murawski, W. W., & Hughes, C. E. (2009). Response to intervention, collaboration, and co-teaching: A logical combination for successful systematic change. *Preventing School Failure, 53*(4), 267-277.

Patton, M. Q. (2008). *Utilization-focused evaluation* (4th ed.). Thousand Oaks, CA: Sage Publications, Inc..

Paik, S., & Phillips, R. (2002). *Student mobility in rural communities: What are the implications for student achievement?* North Central Regional Educational Laboratory. Retrieved from http://www.ncrel.org/policy/pubs/html/rmobile/index.html.

Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology, 98*, 583-597.

Robinson, K. & Mueller, A. S. (2014). Behavioral engagement in learning and math achievement over kindergarten: A contextual analysis. *American Journal of Education, 120*(3), 325-349.

Sciarra, D. T. & Seirup, H. J. (2008). The multidimensionality of school engagement and math achievement among racial groups. *Professional School Counseling*, *11*(4), 218-228.

Smrekar, C. E. & Owens, D. E. (2003). "It's a way of life for us": High mobility and high achievement in department of defense schools. *The Journal of Negro Education, 72*(1), 165-177. Retrieved from http://search.proquest.com/docview/222123678?accountid=14872

Smith, C. R., Marchand-Martella, N. E., & Martella, R. C. (2011). Assessing the effects of the *Rocket Math* program with a primary elementary school student at risk for school failure: A case study. *Education and Treatment of Children, 34*(2), 247-258.

Sullivan, P., Mousley, J., & Zevenbergen, R. (2005). Teacher actions to maximize learning opportunities in heterogeneous classrooms. *International Journal of Science and Mathematics Education, 4*, 117-143.

Appendix B: Context Description

STEPS: Students, Technology, Education Plans = Success

The Coronado Unified School District applied for a Department of Defense Educational Agency (DoDEA) grant and was awarded the three year grant beginning in 2012. The district named the project, STEPS. The grant was written to the Department of Defense in hopes of receiving the grant based on the high numbers of military dependent students enrolled in the district. The Coronado Unified School District is a pre-school through grade 12 district located near three large military installations, all feeding into our schools. This STEPS Project was specifically created to address the needs of our military dependent students who are below proficient in math. The district has a TK-12 total student enrollment of 3,098; with 38% military dependent students. There are two elementary schools in the district. Silver Strand Elementary School has a total of 313 students, of which 76% are military dependent students. Village Elementary School, where I am the principal, has a total of 925 students, of which 36% are military dependent students.

Many military dependent students arrive to the district with gaps in content area knowledge and skills due to the high mobility rates of the military population. They often begin at a new school significantly below grade level in mathematics due to the incongruity of the rigorous state content standards versus their previous states of residence and multiple relocations in a short period of time. The STEPS Project PEP Program was written to address students' holes and gaps in foundational math for grades 3 through 5, based on the lower scores on the district mastery assessments. Military dependent students are subject to frequent relocation based on their parents' assignments (Bradshaw, Sudhinaraset, Mmari, & Blum, 2010), so it is not uncommon for students to enter school in midyear or for fractional portions of their elementary,

middle or high school educations. Most of the time, their academic development is compromised. The majority of the military dependent students are at risk of failing socially, emotionally, and academically.

The Coronado Unified School District is dedicated to the integration of STEAM: Science, Technology, Engineering, Art, and Math. Mathematics is the foundation for success in engineering and science and that technology must be utilized throughout the curriculum in order to prepare students for success in college and careers. The district strategic plan goal of one-to-one student computing, encourages access for all students and provides a means to integrate learning in science, math and engineering. The need to increase teachers' knowledge of and training in STEAM principles and practices, especially at the elementary level is critical in meeting the needs of students. Through analysis of state testing data, the district has identified the need for improvement of mathematics skills as a primary goal area. Data show that out of 1,182 military dependent students district-wide, 29% are below proficient levels based on our state standardized test scores in math. STEPS Project is founded on research-based practices and programs such as STEAM principles, successful intervention strategies, and effective technology practices that improve instruction.

The unique aspect to the project is the personalized education plan component that assists teachers in identifying student's needs and helps students take responsibility for their own learning outcomes. Its major goal is to ensure that military dependent students achieve commensurate with their civilian peers through a highly interactive, individualized instructional system which provides immediate feedback to the students, teachers, and parents. In addition, the concept of blended learning, which is student directed at home at times and/or teacher assisted in the school setting, could be realized as identified students will have access to netbooks that will

establish the standard that learning (and practice of learned skills) can occur outside the formal classroom setting. Netbooks will extend learning time for students who need it the most and for those who may not have access to technology outside of the classroom. This grant will provide a netbook for every military-related student in grades TK-12 in the district.

A critical component of personalizing education for students is the ability to compile and analyze student achievement information. A significant element of STEPS, is the purchase of an assessment system that builds on the use of multiple measures of student achievement. An essential need in the district is the ability to quickly assess students who are newly enrolled to determine areas of strength and need. Northwest Evaluation Association (NWEA) Measures of Academic Progress® (MAP) is a technology-based, adaptive assessment program that enables teachers to pinpoint the skills and concepts that students have mastered, as well as those requiring additional instruction and practice. Once students have taken the MAP assessment, their results can be imported into the Compass Learning Odyssey management system, which automatically create a Common Core standards-aligned learning path for each student, consisting of activities that address the concepts they need to work on most. Through STEPS, all military dependent students in grades 3 through 9 will be assessed using MAP. Although all students in these grade levels will be assessed using MAP and have individual learning paths, data will be collected for the purposes of the grant, specifically on the military dependent students in the aforementioned grade levels.

The development of the online curriculum as part of the STEPS Project is based on an analysis of current research and methodology, including online curriculum evaluations, literature reviews, and best practices in other districts in the nation, which support the implementation of these tools and offer optimal opportunities to address previously identified needs.

Compass Learning Odyssey®: is virtual K-12 curriculum that develops knowledge and higher-order, critical-thinking abilities. Compass Learning uses current and confirmed research to help teachers provide a successful, personalized learning experience for all students by assessing a student's top three interests, learning styles, and expression styles; by evaluating strengths and weaknesses in specified subject areas; and by prescribing highly-personalized engaging instructional pathways that impart knowledge and 21st century skills. Educators can monitor progress and make curriculum adjustments in real-time, based on robust data that can be customized at a student, classroom, grade, school, or district level. Compass Learning and the Northwest Evaluation Association (NWEA) have created a valuable alliance, enabling educators to use detailed NWEA Measures of Academic Progress (MAP) test results to automatically create a personalized Compass Learning Odyssey® learning path for each student.

Establishing additional ways that military families can be connected to their student's education is an on-going challenge and need. Approximately 38% of the students, district-wide, are dependents of active duty military. The military dependent demographic presents unique challenges for the school and its staff in meeting the educational needs of our students. Additionally, due to the current national, state, and District budget crises, many of our sites' essential academic support programs have lost funding and are unaffordable.

Our challenges and solutions include:

Challenge: The district experiences higher than average mobility of military families due to transfer between duty stations, which is exemplified by the fact that less than 21% of the fifth graders in the district began school as Kindergarteners. This high mobility rate involves relocation from different states with varying educational standards. Mobility also poses

difficulties for teachers to accurately measure where those gaps exist, as well as how to best provide interventions and monitor student achievement.

Solutions: Purchase and use Measures of Academic Progress (MAP) to accurately assess students' math skills as soon as they enroll in school and provide teacher training for monitoring progress throughout the year.

Challenge: Frequent relocations, coupled with stressors unique to military life (i.e. deployment, one or more parent(s) absent for extended periods of time, anxiety associated with leaving and making new friends, socio-economic disadvantages, etc.), often disrupt student learning and impact motivation, engagement, and self-regulation. Military dependent students often do not possess the emotional availability necessary for a smooth school transition and focus on learning. Deployed family members have difficulty interacting or remaining highly involved in their children's progress at school.

Solution: Development and use of a Personalized Education Plan (PEP) for each below proficient military dependent student, with goals written by student using input from teacher and parent. PEP will include teacher's assessment of student's academic needs, socio-emotional needs, interests, and career path desires.

Challenge: Our military dependent student population performs at a lower rate than their peers and involves a higher percentage of at-risk students than our general population. For example, current year (2012) military dependent students scored lower on 2011 California Standards Test (CST) than their district counterparts in the area of math; 3% few military students performed at proficient or advanced on the math CST. Military- dependent students make up a significant portion of the population needing support in special intervention programs such as:

- 78% receive Title 1 support

- 89% receive Special Education services
- 75% receive Academic Support in Language Arts

Solution: Establish small instructional groups led by credentialed intervention specialists using virtual curriculum such as Compass Learning and ALEKS (appropriate for grade level and needs). Intervention groups will take place during the instructional school day, before and after school or during the summer. Past efforts have indicated that without using this small group approach, students' needs cannot be met and their learning gaps will become exacerbated as the district's student mobility rate continues to grow. The virtual curriculum strategy has been successful in language arts using small group instruction, direct instruction, and language arts virtual curriculum.

Challenge: The current state and district budget crises have eliminated the likelihood of ongoing funding sources for the district's highly valued academic intervention programs. The district can no longer fund general education summer school for our students who need additional learning time. In the past, summer school has proven especially important for military dependent students, since summer is a common time for relocations. Furthermore, the summer months present an ideal opportunity for intensive teaching and intervention. The use of technology and the availability of laptops for students to check out over the summer would be a valuable opportunity for students to continue work on their skills, especially for our military dependent students.

Solution: Provide summer school opportunities for identified students to extend the learning year. Purchase netbooks for use during the school year, at home, and during the summer for students to log in more practice hours in math.

Appendix C: Object Description, Personalized Education Plan (PEP)

For the purposes of this program evaluation study, the Personalized Education Plan (PEP) component of the STEPS Project will be evaluated. The PEP component was generated for students in grades 3 through 5 to establish additional ways to connect students to their learning in an individualized way in the area of math. The Rennie Center for Education and Policy Research (2011) stated that education plans were linked to improved engagement and increased student accountability by giving students a voice and a choice in there learning progress. The PEP conference and work mat includes setting goals in math and language arts, and student's interests. Students strive to attain their set goals each trimester through the Measures of Academic Progress (MAP) assessments. A student's progress is shared with parents through parent-teacher-student conferences using the PEP as a guide for goal achievement. Progress toward goals is monitored each trimester. Part of the PEP plan is for students to interact with a selected online math program which individualizes each student's particular learning pathway based on their assessment scores during their math intervention time each day. More students fail math than any other subject, which contributes to high school dropout rates as well as students' academic frustration (McCarthy & Kuh 2006). In order to close this achievement gap in mathematics for our students, we have identified the need to generate and implement Personalized Education Plans (PEP) in the area of mathematics for every student, but specifically focusing on the students whose skills are below proficient in math who are connected with the military in grades 3, 5, 7, 8, and 9 for the program evaluation. The PEP will include ongoing assessments using the research-based, Measures of Academic Progress (MAP) to initially evaluate students' math skills and establish baseline data. Intervention specialist teachers will

develop specific, achievable goals with each student using data, student interests, and student needs academically, socially and emotionally.

Appendix D: Letter Requesting Permission to District

University Contact Information:
Walden University [redacted]

District Contact Information:
Coronado Unified School District [redacted]

Researcher Contact Information:
Whitney DeSantis
Principal [redacted]

Title of the study: Evaluation of a Goal Setting Intervention with Grades 3-5 Military-Dependent Students Targeting Math Proficiency

Purpose of the study: To fulfill the requirements for the Doctoral program at Walden University

Reason for the study: I am choosing to conduct a program evaluation using Patton's (2008) utilization-focus evaluation model on the Personalized Education Plan (PEP) program. For this study, I am choosing to focus on the military dependent student subgroup at Village Elementary School in grades 3 through 5, to find out how and if the PEP program is supporting math proficiency. Village Elementary School was chosen because I am employed there and my research study is in my professional field as a scholar-practitioner. Additionally, the military subgroup makes up about 38% of the student population at the school.

Description of district involvement: I am requesting permission to access archival data in the form of math scores from 2012 to the present 2015. Secondly, I will prepare a teacher questionnaire for teachers who teach grades 3 through 5, to voluntarily complete regarding the PEP program. I will provide the questions to the district ahead of time for approval. Thirdly, I will be analyzing the County student satisfaction survey results as a part of the overall data

collection process. I am requesting access once my university approves, and will complete my research study by June 2016 in order to fulfill the district's request for information from my program evaluation this summer to be used to determine next steps for the PEP program for the 15/16 school year.

Thirty (30) teachers from grades 3 through 5 employed at Village Elementary and Silver Strand Elementary will be invited to voluntarily complete a confidential questionnaire regarding the PEP program. Math scores will be obtained from the district office. Data from existing student satisfaction surveys will be analyzed and used as a tool to help potentially contribute more information to the evaluation and support triangulation of the data. There is no harm or risk involved to teacher participants. Teachers will receive a letter informing them of the research study and inviting them to participate. In the letter, teachers will be informed that participation is strictly voluntary and will be confidential. Further, participants will be informed there is absolutely no risk or harm to them or their career at the school site or district, if they do decide to participate. Teachers will be informed that they can change their mind at any time, for any reason, and they will never be questioned regarding their decision. Teachers nor the district will receive no compensation participation in this research study. At the end of this research study, I will share my findings and show how teacher input helped my study.

I am requesting that the Coronado Unified School District write a letter granting me permission to perform my program evaluation research study. Please include the following information from the checklist below:

The letter written *by the **organization*** in response to this request must include the following:

- √ The letter must be written on formal organizational letterhead, or in the case of e-mail messages—which deserve additional considerations (see below)—include a formal header or footer with the agency's name, address, and contact information.
- √ A description of what the organization has agreed to do, provide, or allow the researcher to do.
- √ The specific type of information that the organization has agreed to provide to the researcher, or direct access to prospective participants, and how access to the information or people will be provided, must be described.
- √ It should be stated that providing access to information or people is done in accordance to any organization policies or applicable local, state, or Federal regulation, such as HIPAA, FERPA, etc.
- √ Any special considerations for approaching prospective participants or handling existing data needed to assure respect, privacy, anonymity, or confidentiality.
- √ That the person signing the document and granting permission has the authority to do so, and that either no other permission or review is needed, or if needed, that this has been sought and documented (e.g., a board's review, an internal IRB, etc.).
- √ The expiration date of the permissions (generally one year from the date of the letter).

The signature of the person along with that person's printed name and title.

Respectfully,

Whitney DeSantis
Researcher

Appendix E: Letter of Cooperation from District

Superintendent of Schools
[redacted]

January 20, 2015

Dear Whitney DeSantis,

The Coronado Unified School District approves you to conduct a program evaluation on the Personalized Education Plan (PEP) component of the Department of Defense Education Activity (DoDEA) Project STEPS grant. As part of the evaluation, you are authorized to obtain and use archival data for student math scores, disseminate confidential questionnaires to teachers at your school site, and use the student survey data collected by the external evaluator of the Project STEPS grant. The authorization of the use of confidential questionnaires to teachers versus interviews is due to your position as principal at the site. The expiration date of these permissions is January 20, 2016. The district is confident that the information obtained through the confidential teacher questionnaires will be sufficient for the purposes of this program evaluation.

Teacher participation will be voluntary and the data obtained will remain confidential and may not be provided to anyone outside of the research team without permission from Walden University. Providing access to information or people is done in accordance to any organization policies or applicable local, state, or Federal regulation, such as HIPAA, FERPA, etc.

As the 3 year Program STEPS grant comes to an end in June 2015, the information and recommendations from your program evaluation will be timely and used to determine next steps for the 2015-16 school year. The district looks forward to hearing the outcome of your PEP program evaluation project study.

I confirm that I am authorized to approve your program evaluation project study at your school site in the Coronado Unified School District.

Sincerely,

[redacted]
Superintendent of Schools

Appendix F: Participant Invitation Letter

My name is Whitney DeSantis and I am a Principal at Village Elementary in the Coronado Unified School District. I am conducting research as a requirement of Walden University for a Doctorate in Curriculum, Instruction, and Assessment titled, "Evaluation of a Goal Setting Intervention with Grades 3-5 Military Dependent Students Targeting Math Proficiency."

You are invited to participate in my research study which is an online confidential questionnaire through Survey Monkey on the PEP goal setting program in mathematics. Your participation is strictly voluntary and your participation is confidential. The questionnaire consists of 7 open-ended questions and should take approximately 15 minutes to complete. There is absolutely no risk or harm to you or your career at the school site or district, if you do decide to participate. If you do decide to participate, you can change your mind at any time, for any reason, will never be questioned regarding your decision, and will be held harmless. You will receive no compensation for your participation in this research study, but I will be very grateful for taking the time out of your busy day to complete the questionnaire. At the end of this research study, I will share my findings so you can see how teacher input helped my study. The universal link to the on-line questionnaire: http://www.surveymonkey.com/r/ZW8WFFL

If you have questions regarding participation, please contact me at whitney.desantis@waldenu.edu.

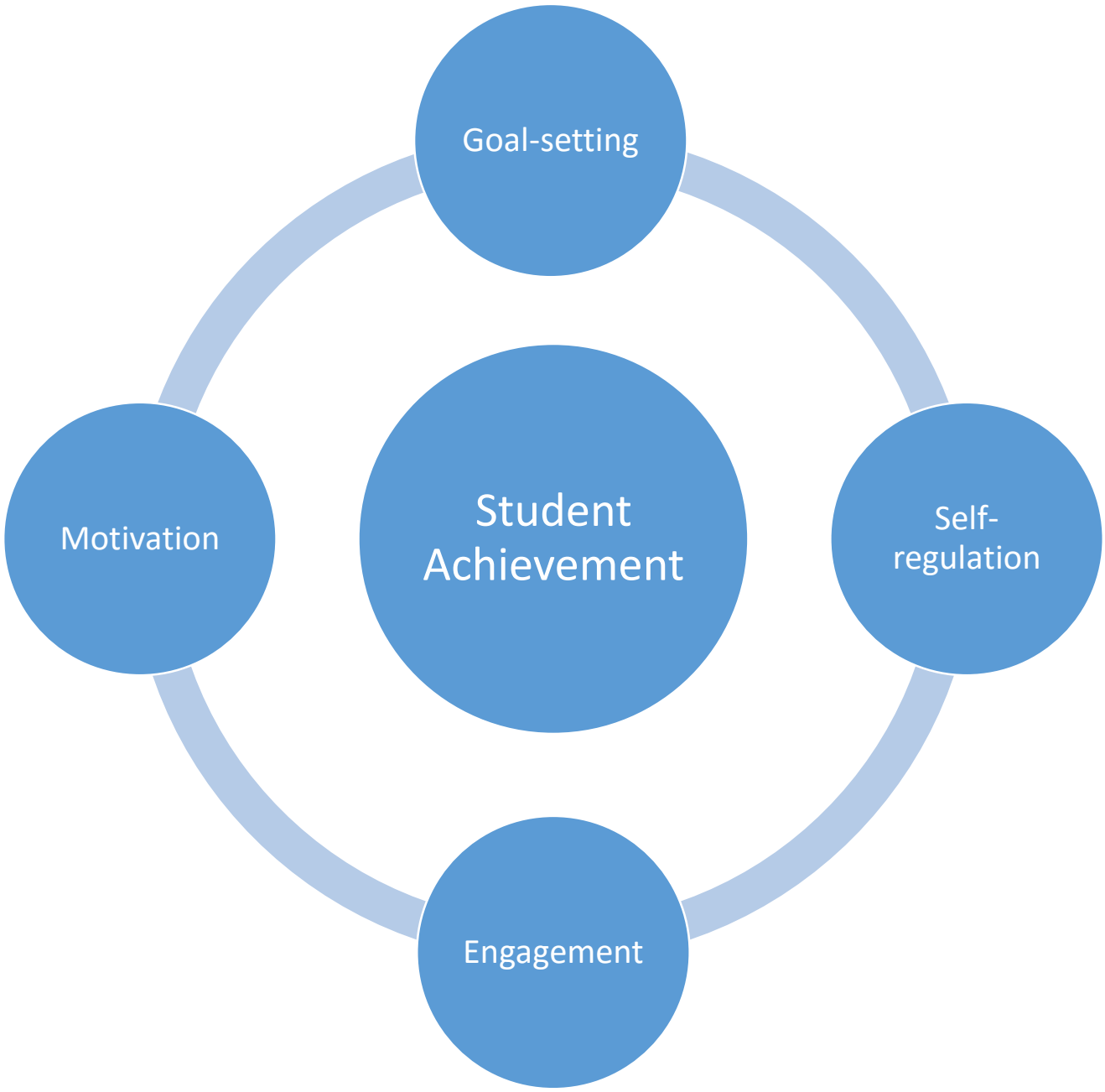
Sincerely,

Whitney DeSantis, M.Ed

Appendix G: Voluntary Teacher Confidential Online Questionnaire

1. How do you think the PEP process has impacted student achievement in math?
2. How does the PEP program affect student motivation in math?
3. How do you feel the PEP goal setting conferences affect student engagement in math?
4. How do your students feel about setting goals?
5. Do you feel the PEP goal setting process has an impact on students' abilities to self-regulate their learning? Why or why not?
6. Give two or three observations that stand out in your mind when you think about the PEP process over the past three years.
7. Are there any improvements or changes to the PEP program you would suggest?

Appendix H: Logic Model Diagram of Theories



Appendix I: Student Survey administered by SDCOE external evaluator

School Engagement Survey

Elementary Version

Spring 2013

This survey is **voluntary**. You do not have to complete it, but we hope that you will. Your answers will be used to improve schools in Coronado.

Please mark only one answer for each question.

Please read every question carefully.

This survey should take you about 10 minutes to take.

Thank you for participating.

Coronado Unified School District

School Engagement Survey

Spring 2013

The first questions are about you.

What grade are you in? (Circle one)	03	04	05	06
What are the first two letters of your FIRST NAME?				
On what DAY of the month were you born (01-31)?				
What are the first two letters of your LAST NAME?				
Write your teachers name here. →				

The next questions ask about your school. Circle the letter that best describes how you feel about YOUR school.

1. My class is interesting to me.

A) Not at all true B) Not very true C) Sort of true D) Very true

2. In my class, I need to think creatively.

A) Not at all true B) Not very true C) Sort of true D) Very true

3. My teacher works with me to make sure that I am learning.

A) Not at all true B) Not very true C) Sort of true D) Very true

4. I enjoy my schoolwork.
A) Not at all true B) Not very true C) Sort of true D) Very true

5. In my class, I have the opportunity to solve interesting problems with others.
A) Not at all true B) Not very true C) Sort of true D) Very true

6. If I work hard, I can do well in my class.
A) Not at all true B) Not very true C) Sort of true D) Very true

7. What I learn in my class helps me in my life outside of school.
A) Not at all true B) Not very true C) Sort of true D) Very true

8. I think that what I learn in my class will help me be successful in life.
A) Not at all true B) Not very true C) Sort of true D) Very true

9. In my class, I am allowed to make choices about projects I do or what I learn.
A) Not at all true B) Not very true C) Sort of true D) Very true

10. My teacher challenges me to do my best work in school.
A) Not at all true B) Not very true C) Sort of true D) Very true

11. Sometimes I like doing my schoolwork so much that time passes by very quickly.
A) Not at all true B) Not very true C) Sort of true D) Very true

12. If there were no grades given in this school, I'd still do my school work.

A) Not at all true B) Not very true C) Sort of true D) Very true

13. My assignments are completed and turned in on time.
A) Not at all true B) Not very true C) Sort of true D) Very true

14. I am proud of my school work.
A) Not at all true B) Not very true C) Sort of true D) Very true

15. I think it is important to learn what my teacher is teaching.
A) Not at all true B) Not very true C) Sort of true D) Very true

16. My teacher would say that I participate in class.
A) Not at all true B) Not very true C) Sort of true D) Very true

17. I like talking to my teacher about what I'm learning about in school.
A) Not at all true B) Not very true C) Sort of true D) Very true

18. I know an adult in this school who I could talk to if I had a personal problem.
A) Not at all true B) Not very true C) Sort of true D) Very true

19. My teachers are interested in my thoughts and opinions.
A) Not at all true B) Not very true C) Sort of true D) Very true

20. My teacher is interested in me as a student and as a person.
A) Not at all true B) Not very true C) Sort of true D) Very true

21. I trust at least one adult in this school.
A) Not at all true B) Not very true C) Sort of true D) Very true

22. I enjoy coming to school.
A) Not at all true B) Not very true C) Sort of true D) Very true

23. My classmates care about me.
A) Not at all true B) Not very true C) Sort of true D) Very true

24. I am proud of my school.
A) Not at all true B) Not very true C) Sort of true D) Very true

25. The adults in this school are proud of me.
A) Not at all true B) Not very true C) Sort of true D) Very true

26. I think it is important to work hard in school.
A) Not at all true B) Not very true C) Sort of true D) Very true

27. If I don't understand something I am supposed to learn, I ask my teacher for help.
A) Not at all true B) Not very true C) Sort of true D) Very true

28. The adults in this school trust me to make good decisions.
A) Not at all true B) Not very true C) Sort of true D) Very true

29. I trust the adults in this school to make decisions that are in my best interest.

A) Not at all true B) Not very true C) Sort of true D) Very true

30. I feel safe when I am at school.
A) Not at all true B) Not very true C) Sort of true D) Very true

31. It is safe for me to express my ideas and opinions when I am at school.
A) Not at all true B) Not very true C) Sort of true D) Very true

32. The rules in this school are fair.
A) Not at all true B) Not very true C) Sort of true D) Very true

33. The books I read for school make sense to me.
A) Not at all true B) Not very true C) Sort of true D) Very true

34. My teacher's lessons make sense to me.
A) Not at all true B) Not very true C) Sort of true D) Very true

35. When I'm in school, I follow this school's rules.
A) Not at all true B) Not very true C) Sort of true D) Very true

This completes the survey