

FINDING FUNDS FOR A CLASSROOM SET OF CALCULATORS

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ABSTRACT

This project was completed in order to find funds for a classroom set of calculators at Glen Lake Community Schools. In recent years, Glen lake students, parents and community have great pride in receiving and maintaining high scores on the MEAP and ACT assessments. Although the scores are above average, as educators, we are constantly looking for ways to improve and be better than we were in preceding years. It was found that there is a need at Glen Lake Community Schools for calculators and that calculators and teaching alike can help increase scores on state assessments. The funding source will be Glen Lake Community Schools educational fund.

TABLE OF CONTENTS

CHAPTER		
1	INTRODUCTION AND BACKGROUND OF THE PROJECT	1
	Statement of Need	2
	Purpose of the Project	3
	Statement of the Project Goals	4
2	LITERATURE REVIEW	5
	The Common Core State Standards	5
	Use of Calculators	5
	Research on the use of calculators and other tools	8
	Funding sources for teachers	9
	The Benefits of Using Calculators in Mathematics	10
3	METHODOLOGY	12
4	FINDINGS	14
5	CONCLUSIONS AND LIMITATIONS	25

LIST OF FIGURES	20
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CHAPTER 1

INTRODUCTION

Introduction and Background of the Project

Glen Lake Community Schools resides in Leelanau County which encompasses the Sleeping Bear Sand Dunes, National Lakeshores, and many other fascinating cities and adventures. This community thrives on tourism during the summer months and becomes very ghostlike during the winter months. Glen Lake Community Schools is made up of neighboring communities such as Cedar, Maple City, Empire, and Glen Arbor.

Glen Lake has about a 35 % school of choice population (V. Woessner, personal communication, August 6, 2014). Glen Lake Community Schools is a unique school in that pre-school through seniors, the entire district itself is housed in the same building, including administration offices. Each level has its own wing of the building, yet the entire school comes together to share one cafeteria.

The secondary school is considered to house 6th – 12th graders. There are about 422 students in those grades, which yields approximately 70 students per grade level. According to records taken in 2012, 32.5% of the student population received free and reduced lunches (*School Digger, 2014*).

Glen Lake Community Schools is composed of 94% White, 2% American Indian, 2% Asian, 2% Hispanic, and 1% African American students (*Great Schools, 2014*).

Statement of Need

In recent years, Glen Lake students, parents, staff and community have great pride in receiving and maintaining high scores on the MEAP and ACT assessments. Although the scores are above average, as educators, we are constantly looking for a way to improve and be better than we were in preceding years. Glen Lake Community Schools belief statements are:

- Everyone can learn.
- Every person is entitled to be respected, valued, and nurtured.
- Every learner is entitled to the best education possible.
- The learning environment must be organized, with high expectations, to encourage success for all.
- Education improves the student, parent, staff, and community involvement.

(Mission and Vision, 2014)

This project was chosen to find funding sources for a classroom set of calculators because of these belief statements. When reflecting on the schools belief “Every learner is entitled to the best education possible,” (*Mission and Vision, 2014*) There is inspiration that as an educator there is an ability to help in this mission. As an educator, it is believed that every student should have the tools necessary to be entitled to the best education possible.

Glen Lake Community Schools, along with schools in 45 other states, have adopted the Common Core State Standards. Within these standards are eight

Mathematical Practice Standards. These standards are used at all levels K – 12, to develop mathematical thinkers and processors. All eight Mathematical Practice Standards are very important, but one standard that the Glen Lake students are missing is *MP5: Use appropriate tools strategically (Standards for Mathematical Practice, 2014)*. Being able to put a calculator “tool” in every student’s hand is the first step in providing the best education possible to our students. Once we can get the calculator into the student’s hands it will be our job as educators to teach them how to use it in the most efficient and productive way to increase confidence, accessibility, and in the end, accurate and elevated scores.

Although it has not been determined the exact calculator that would be purchased, the Texas Instrument calculators that are used by most Glen Lake high school students range between \$90 – \$165. This has been a financial burden on many families in our district, with some not able to provide this important tool because their households cannot afford such an item. It is hoped that every student will be afforded the opportunity of using a calculator, with money not being a barrier.

Although the ACT scores have risen in the past two school years, we are still below the math department target goal of 23 (L. Wiesen, Personal Communication, August 6, 2014). In the 2011-2012 school year Glen Lake students averaged a 20.02 score on the ACT. In the 2012-2013 school year that averaged increased to 20.93 (*Glen Lake Community Schools, 2014*).

Purpose of the Project

The purpose of the project is to complete a needs assessment of the math department, develop a rationale for improving the scores, and identify potential funding

opportunities for improving math scores at Glen Lake Community Schools. The funding will be used to purchase a classroom set of calculators.

Statement of the Project Goals

This project will be completed in four phases:

Phase 1: Identify the strengths and weaknesses (e.g., needs) of the math department at the school

Phase 2: Identify “best practices” for working using calculators

Phase 3: Identify local, state, and national funding sources for purchasing items

Phase 4: Present the information to the school administration and make a proposal on a direction

CHAPTER 2

LITERATURE REVIEW

The Common Core State Standards

The Common Core State Standards have been adapted by the Michigan Department of Education. The world that these high schools students are entering is much different than it was 20 years ago. Today's businessmen and colleges alike have increased their expectations, demanding more than ever before. To ensure all students are ready for success after high school, the Common Core state Standards have been established to provide a clear and consistent set of guidelines for which every student should be able to do and know from kindergarten through the 12th grade.

These standards were drafted by experts and teachers from across the county and are designed to ensure students are prepared for today's entry-level careers, colleges and workforce training programs. The Common Core State Standards focus is on critical thinking, problem solving, and analytical skills students will need to be successful ("What Parents Should Know | Common Core State Standards Initiative," 2015).

Use of Calculators

According to the Common Core State Standards (CCSS) there are eight Mathematical Practice Standards that are used at all levels to develop expertise in

mathematics (*Standards for Mathematical Practice, 2014*). When students use calculators in Glen Lake high school classroom, most students tend to gravitate toward the Texas Instrument (TI) calculators. TI has put a plethora of resources on their website for parents, students and educators. They have broken down how educators can use a calculator to enhance the eight Mathematical Practice Standards.

The first standard that TI has provided help is the standard, *Makes sense of problems and perseveres in solving them* (*Standards for Mathematical Practice, 2014*). TI states that their calculators open the door to proficiency by helping students visualize mathematics and develop models to explain the meaning of their solutions (*Common Core State Standards by Texas Instruments – US and Canada, 2014*).

The second Mathematical Practice Standard is, *Reason abstractly and quantitatively* (*Standards for Mathematical Practice, 2014*). TI states that their calculators can create graphs and tables to visualize relationships and to explain their reasoning in a problem or solution (*Common Core State Standards by Texas Instruments – US and Canada, 2014*). While using the calculators, the student's have the ability to plug in functions into the $y =$ function on their calculator and it will produce a table and a graph for each function entered.

The third standard is, *Construct viable arguments and critique the reasoning of others* (*Standards for Mathematical Practice, 2014*). TI provides interactive lessons that can be downloaded onto each student's calculator that allows for them to construct viable arguments. The downfall to this is that everyone has to have the same calculator model and the teacher has to have the ability to download the appropriate interactive lesson or activity, thus making the third standard harder to justify at the high school level.

The fourth standard is, *Model with mathematics (Standards for Mathematical Practice, 2014)*. TI states that their calculators allow students to create models for data. In turn, they can use that model to discover mathematical relationships and identify important quantities from the set of given data (*Common Core State Standards by Texas Instruments – US and Canada, 2014*).

The fifth standard is, *Use appropriate tools strategically (Standards for Mathematical Practice, 2014)*. TI states that their calculators can generate and analyze graphs to represent functions or data. The student can then use these results to formulate reasonable conclusions about a problem or situation (*Common Core State Standards by Texas Instruments – US and Canada, 2014*).

The sixth standard is, *Attend to precision (Standards for Mathematical Practice, 2014)*. This is yet another standard that is more teacher developed and the calculator has little to do with the precision of the work itself. If the students use the graph function, the calculator can give exact answers of intersection points, maximum, minimum, and many other aspects of the graph.

The seventh standard is, *Look for and make use of structure (Standards for Mathematical Practice, 2014)*. The calculator allows students to use graphs, tables and equations to help visualize relationships and structures (*Common Core State Standards by Texas Instruments – US and Canada, 2014*). Students are asked daily in class and on standardized assessments to visualize a given relationship. The calculator is one tool that makes this process much quicker and more efficient than doing visuals with paper and pencil.

The eighth and final Mathematical Practice Standard is, *Look for and express regularity in repeated reasoning* (Standards for Mathematical Practice, 2014). TI states that students can use the TI calculators to distinguish patterns in functions and their graphs (Common Core State Standards by Texas Instruments – US and Canada, 2014).

Research on the use of Calculators and other tools

There are numerous tools used in the mathematics classroom today. White boards, calculators, computers, iPads, rulers, protractors, compasses, and the list goes on.

Technology is used more in today classrooms than it was in years past. Students use laptops, computers, tablets, and smart boards during the learning process. In mathematics, the use of technology can be very useful in engaging students with new material and daily lessons. Online websites are another avenue in which teachers can increase student engagement. When dealing with online websites, the options are endless, making it hard to find good sites that teachers can use. While concrete manipulative are still used daily in classrooms, technology adds to the learning experience. Technology gives students prompts, feedback, and answers to problems allowing for more self exploration and self teaching. Having an internet connection at home is almost imperative in today's educational world for parents and students alike (Teaching Math Using Technology, 2014).

As technology has changed the world around us, it has also made mathematics more fluid. The ability to replicate and model functions is at the tips of our student's fingers. According to the North Central Regional Educational Laboratory (2005), in a 2000 study commissioned by the Software and Information Industry Association, Sivin-Kachala and Bialo (2000) reviewed 311 research studies on the effectiveness of

technology on student achievement. Their findings revealed positive and consistent patterns when students were engaged in technology-rich environments, including significant gains and achievement in all subject areas, increased achievement in preschool through high school for both regular and special needs students, and improved attitudes toward learning and increased self-esteem. (2005)

Michelle Flaming (2012) posted that math tools do not guarantee success. Sometimes students learn to use manipulatives (tools) in a rote manner. As teachers, we need to reflect on the role of the tools and how they connect to mathematical ideas. If math tools are not the silver bullet, what makes a perfect equation to insure mathematical success? Success comes from math tools, student discussion, engagement, questioning, reflection, cooperative learning, perseverance, and well thought out activities to deepen students understanding and love for math.

As it takes a village to raise a child, it takes multiple approaches and tools to raise a mathematical mind.

Funding Sources for teachers

The World Wide Web has made finding funding sources for teachers easier than ever. Teachers, administrators, and other educators can procure a wealth of grant resources and information securing funds. The first step on the grant process is finding funding sources whose goals and objectives have math as an intended project. When applying for a grant, the organization applying needs to provide documented need or problem to secure the grant. The writer needs to do a great deal of research to show the need for the grant (Schnitzer, 1996).

Schnitzer (1996) offered a wealth of websites, local, national, and state organizations worth looking if a grant is needed for obtaining a classroom set of calculators.

- Eisenhower National Clearinghouse for Mathematics and Science Education
- U.S. Department of Education
- FedWorld Information Network
- K-12 World: A Global Education Community
- AT&T Foundation
- BellSouth Foundation
- Charles A. Dana Foundation
- Rockefeller Brothers Fund

Most of our local big box stores also have educational grant opportunities such as Kohls, Target, Walmart, Meijer, Staples, and Office Depot to name a few.

The Benefits of Using a Calculator in Mathematics

The use of calculators has been a controversial debate for many years. The current standards presented by the Common Core State Standards promote the use of calculators, stating that it is a “tool” students can use to improve problem solving and conceptual understanding of mathematics. Studies have shown that students that are instructed using graphing calculators demonstrate improved understanding of functions and graphing. They have a better grasp on representing algebraic concepts and an increase understanding on both symbolic and graphical solution methods (Dewey, Kinzel, & Singletary, 2009).

Graphing calculators have taken high school math to a new level, forcing students and teachers alike to keep up with the changes in technology. Graphing calculators have molded into sophisticated devices that can run mathematical programs and create complex graphs in an instant. For many high school math classes, graphing calculators have become mandatory. These calculators can be used on high stakes tests such as the ACT, SAT, and other advanced placement exams and standardized tests. People have begun to create programs to help solve math problems on the ACT and SAT math exams. When these programs are used the student can just run the program, plug in the unknown values and watch the answer appear (Lee, J. 1999). Educator's fear this new programming, as it takes away from students rote practice and true understanding of mathematical concepts. According to Lee (1999), students who use calculators on the general college admission test do slightly better than students who do not use calculators. He states that the students who use calculators can avoid computation errors, not necessarily because of the design of the test.

CHAPTER 3

METHODOLOGY

This project will be conducted in four phases. Described here the plans of action for each phase individually.

Phase 1: Identify the strengths and weaknesses (e.g., needs) of the math department at the school

- Analyze the PLAN, EXPLORE, and ACT data to determine the greatest needs in my school.
- Choose five top areas of weakness and determine how the calculator could aid in the increase of those scores.
- Talk to the other members of the math department and discuss the strengths and weaknesses of the math department to prioritize the needs of the math department.

Phase 2: Identify “best practices” for working using calculators

- Research the Texas Instrument website to identify the best practices related to the use of calculators in the classroom.
- Collaborate with other math teachers both in the district and in other districts to discuss the best practices related to the use of calculators in the classroom.

Phase 3: Identify local, state, and national funding sources for purchasing items

- Conduct a Google search to find local, state, and national funding sources for obtaining calculators for Glen Lake Community Schools.
- Identify the people within the district who have written grants for our school and ask for assistance in this process.
- Look into www.donorschoose.org
- Discuss with the administration possible funding sources within our school district.

Phase 4: Present the information to the school administration and make a proposal on a direction

- Compile the information necessary to write a grant for a classroom set of calculators and present the information to the principal.
- Make a proposal on a direction which should be taken in writing the grant.
- Share the story (and hopefully successes) with the school board after the project is complete.

CHAPTER 4

FINDINGS

Phase 1: Identify the strengths and weaknesses (e.g., needs) of the math department at the school

During this phase, assessment data was obtained from Glen Lake Community Schools. They were able to share data from the MME (2009 – 2014), PLAN (2013 – 2014), and EXPLORE (2013 – 2014) assessments. Below are some notes on findings relative to each assessment.

Areas of Weakness

According to the 2013 – 2014 PLAN Item Response Summary Report – Test Form: 32B

- Coordinate Geometry = Average of 46% Correct
 - Finding Slope
 - Graphing horizontal lines
 - Parallel Lines
- Elementary Algebra = Average 53% Correct
 - Exponents
 - Combining like terms
 - Inequalities = solving equations

- Quadratic function = x – intercepts
- Solving for a variable

According to the 2013 – 2014 EXPLORE Item Response Summary Report = Test form:

05B

- Pre – Algebra = Average of 57% correct
 - Multiplying Radical Expressions
 - Finding area of a circle
 - Fractions, decimals, percents
 - Proportions
 - Percent
 - Combinations/permutations
 - Reading tables

MME Trend Maple City- Glen Lake Jr/Sr High School: 11th Grade/All Subjects/All Students

- 2009 – 2010 33.8% Proficient or Advanced 43.1% Partially Proficient
 - 50% Transformations of figures
 - 40% Families of Functions
 - 40% Math Reasoning, Logic & Proof
 - 40% Reasoning about Numbers
- 2010 – 2011 25.1% Proficient or Advanced 42.7% Partially Proficient
 - 30% Bivariate Data: Relationships
 - 40% Relationships between figures
 - 39% Figures & Properties

- 45% Families of Functions
- 48% Functions
- 41% Reasoning about Numbers
- 2011 – 2012 35% Proficient or Advanced 27% Partially Proficient
 - 50% Bivariate Data: Relationships
 - 46% Figures & Properties
 - 40% Families of Functions
 - 48% Functions
 - 50% Calculations, Algorithms
- 2012 – 2013 39% Proficient or Advanced 49% Partially Proficient
 - 47% Univariate Data: Distributions
 - 50% Relationships between Figures
 - 45% Math Reasoning, Logic & Proof
 - 40% Reasoning about Numbers
- 2013 – 2014 27% Proficient or Advanced 48% Partially Proficient
 - 50% Calculations, Algorithms
 - 45% Families of Functions
 - 41% Figures & Properties
 - 50% Relationships between Figures

The data found is alarming to the math department. Although there are many areas of weakness, the top five weaknesses that stand out are calculations and algorithms, families of functions, figures and properties, functions and solving equations. A calculator could aid in most of these weaknesses through a variety of different uses.

Improvements in Calculations and Algorithms can fully be supported with the use of a calculator. Educators need to take more time teaching students how to appropriately use each aspect of the calculator. Students need to be shown what the calculator can do for them. Once they are educated on using this tool, they can continue to improve and practice the calculations needed at any level of mathematics. It is the educator's job and role to teach these young minds how to use the tool to the best of their ability.

Families of Functions and Functions can also be supported with the use of a calculator. The calculator allows them to make observations and hypothesize what a function looks like, acts like, and how they change from the original form. Glen Lake students do not use their calculator enough when it comes to graphing and an educator's role is to facilitate this process so they can do so with ease. Figures and Properties is another weakness but a calculator may not properly aid in improving these scores. Besides finding unknown lengths mathematically, a student needs to be taught through other avenues other than a calculator for this weakness.

Solving Equations is the fifth area of weakness discovered through this process. Solving linear, quadratic, exponential, logarithmic, and many other types of functions are needed to be successful in mathematics. Through all of this research, data, and readings it was learned that calculators themselves will not improve scores. Teachers need to continue to use them every day in instruction, teach students how to use the tool appropriately in any given context and never give up on the instruction of math and calculators alike.

The math department at Glen Lake has spent many hours and days meetings discussing the strengths and weaknesses at the secondary level. During these meetings

the administration asked the teachers to talk about the math program and see how it can be supported and what it can do to improve scores. The principal, Mr. Konrad Molter also asked to be a part of the discussion to provide the math department with insight and input (K. Molter, personal communication, October 1, 2014).

As a result of these meetings, vertical alignment of the curriculums were completed and the math department has noticed that Probability and Statistics is the largest areas of weakness in the math department. To combat this weakness, a unit that touches on the Statistics portion was created. The Geometry teacher was asked to create a unit that incorporates the Probability portion. The upper levels, Algebra 2, Pre-Calc, and Calculus teachers were asked to add some sort of Probability and Statistics into their curriculum also.

Phase 2: Identify “best practices” for working using calculators

The Texas Instrument website is loaded with resources for students, teachers, and parents. At minimum, Texas Instrument calculators provide a platform for computing rote mathematical problems. Its site also provides apps, downloads, software, activities, lesson plans, professional development, product details, and support. The State of Michigan has adopted the Common Core State Standards (CCSS) for all subjects. According to the CCSS there are 8 Mathematical Practice Standards; number five is Use Appropriate tools strategically. As an educator, a calculator is one tool that is used to help do mathematics and model mathematics which is yet another one of the 8 Mathematical Practice Standards. The Texas Instrument website states, “Implement CCSS with learning tools that facilitate multiple entry points into problems, classroom

discourse, differentiated instruction and formative assessment" (*Common Core State Standards by Texas Instruments – US and Canada, 2014*).

During this phase time was taken to collaborate with other math teachers both in the district and in neighboring districts. Professional development offered by the Traverse Bay Area Intermediate School District and at Glen Lake Community Schools was used. Best practices as they related to the use of calculators in the classroom were discussed. According to observations and conversations, 100% of all area high school teachers use some sort of Texas Instrument calculators as a tool for learning in their classrooms. Leland Public Schools and Traverse City Area Public Schools mainly use the TI-Nspire calculator; although due to money constraints, the cheaper TI-94 calculator is used by many of their students. Glen Lake Community Schools, Suttons Bay High School, Benzie Central High School, Frankfort High School, Forest Area High School, and Kingsley High Schools all primarily use the TI-94 calculators.

Calculators are used to compute rote problems, check answers, graph functions, and model mathematics. Each Texas Instrument calculator has its strengths and weaknesses, thus there is not one sure choice when it comes to choosing a calculator. Below is a chart that was used during the professional development with other mathematicians.

A graphing calculator is a learning tool designed to help students visualize and better understand concepts in math and science.

Check out the chart below to determine which TI graphing calculator is right for you.

	TI-83 Plus	TI-84 Plus	TI-84 Plus Silver Edition	TI-84 Plus C Silver Edition	TI-Nspire™ CX	TI-89 Titanium	TI-Nspire™ CX CAS
Permitted on Tests							
SAT*	●	●	●	●	●	●	●
AP*	●	●	●	●	●	●	●
PSAT/NMSQT*	●	●	●	●	●	●	●
ACT*	●	●	●	●	●	●	●
International Baccalaureate®	●	●	●	●	●	●	●
Praxis™	●	●	●	●	●	●	●
Key Features							
User Available Memory	160KB/24K (ROM/RAM)	480KB/24K (ROM/RAM)	1.5MB/24K (ROM/RAM)	3.5MB/21K (ROM/RAM)	100MB	2.7MB/188K (ROM/RAM)	100MB
USB Cable Included		●	●	●	●	●	●
Color display				●	●	●	●
Rechargeable Battery				●	●	●	●
Alkaline Batteries (4AAA)	●	●	●	●	●	●	●
Ability to utilize images***				●	●	●	●
Included preloaded applications		●	●	●	●	●	●
Includes computer software**				●	●	●	●
Customizable faceplates and slide cases available			●	●	●	●	●
Appropriate for these courses							
Pre-Algebra	●	●	●	●	●	●	●
Algebra 1 & 2	●	●	●	●	●	●	●
Trigonometry	●	●	●	●	●	●	●
Geometry		●	●	●	●	●	●
Precalculus		●	●	●	●	●	●
Statistics/AP Statistics	●	●	●	●	●	●	●
Business & Finance	●	●	●	●	●	●	●
College Math		●	●	●	●	●	●
Electrical Engineering					●	●	●
Mechanical Engineering					●	●	●
Differential Equations					●	●	●
Linear Algebra		●	●	●	●	●	●
Calculus/AP* Calculus	●	●	●	●	●	●	●
Life science					●	●	●
Earth Science					●	●	●
Physical Science					●	●	●
Biology	●	●	●	●	●	●	●
Chemistry/AP* Chemistry	●	●	●	●	●	●	●
Physics/AP* Physics	●	●	●	●	●	●	●

* SAT and AP are trademarks owned by the College Board. PSAT/NMSQT is a registered trademark of the College Board and National Merit Scholarship Corporation. ACT is a registered trademark of ACT, Inc. International Baccalaureate is a registered trademark of the International Baccalaureate Organization. Praxis is a trademark of Educational Testing Service. None was involved in the production of nor endorses TI products.

**Student Software is available in certain retail packages.

***The following image types are supported: .jpeg, .jpg, .bmp, .png.

Phase 3: Identify local, state, and national funding sources for purchasing items

On July 25, 2014 an email asking the Glen Lake Community Schools administrator about writing a grant for a classroom set of calculators was sent, the reply was not one that was expected. He wrote that under no uncertain terms that any teacher can write or apply for a grant. He stated that “if there is need, we can work it out” with him and our technology director (K.Molter, personal communication, July 27, 2014).

It was decided that a face to face conversation with him was needed, as the desire to find the funding sources for a classroom set of calculators was essential for classroom instruction and a Masters project. He assured me that because of the Technology Millage and the Impact Aid money that the school receives, that we would more than likely be able to purchase the calculators for the school if the math department and myself would write up a proposal of need.

On November 6, 2014 the math department gathered and put together that proposal for our administrators. Our principal then took the proposal and added to it. He found a purchase order from a previous order of TI-84 Plus calculators, and incorporated the cost of the desired calculators to the proposal. The proposal was sent back to us for revision and will be going to the Board of Education in January, 2015.

The people of Glen Lake Community Schools have written many grants for items such as drama lighting, technology, educational tools, and equipment for athletics. Through daily conversations it was noted that two teachers at Glen Lake Community Schools have had experience in this area. They have both offered their assistance when and if this avenue is needed.

The importance of finding additional local, state, and national funding sources for obtaining calculators has become drastically less providing the news from my administrator. With that said, I have spent time researching for potential websites that provide educational grants to schools and educators. Below are some of the websites I have found if a grant is needed.

- <http://www.neafoundation.org/pages/grants-to-educators/>
 - Grants to Educators
 - They support new ideas and practices to strengthen teaching and learning. Their number one goal is to fund and share successful strategies to educate and prepare students for bright futures.
- www.donorschoose.org
 - A teacher creates a request of need on this sight. There are supporters (donors) on this sight that can choose what project they want to support and how much they will support. There are 1,678,759 supporters of this sight that are looking to fund Public school teachers.
- <http://teach.com/what/grants-for-teachers>
 - This site offers a wide variety of sources available for funding educational initiatives. Grants, fellowships and scholarships are available for teachers who want to help their students.
 - These funds come from all sorts of sources, from the federal government to private companies and charities, and they focus on a wide range of topics. There are literally thousands of education grants for teachers.
- <http://www.toolboxforeducation.com/>

- Lowe's will donate up to \$5 million to public schools and public school parent teacher groups - at as many as 1,000 different public schools per school year.
- <http://foundation.walmart.com/apply-for-grants/>
 - National Giving Program - Awards grants of \$250,000 and above. Eligible nonprofit organizations must operate on a national scope through chapters/affiliates in many states around the country or through programs that operate regionally/locally but seek funding to replicate program activities nationally.
 - State Giving Program - Awards grants of \$25,000 to \$250,000. Eligible nonprofit organizations must operate on a regional/state level or be affiliates/chapters of larger organizations that operate on the regional/state level.
 - Community Grant Program - Awards grants of \$250 to \$2,500 through Walmart stores, Sam's Clubs and Logistics facilities. Eligible nonprofit organizations must operate within the service area of the facility from which they are requesting funding.
- <https://www.statefarm.com/about-us/community/education-programs/grants-scholarships/company-grants>
 - State Farm makes it their business to be like a good neighbor, helping to build safer, stronger and better educated communities across the United States. Through company grants, they focus on two areas: safety and education.

Phase 4: Present the information to the school administration and make a proposal on a direction

As stated before, the proposal was written on November 6, 2014 and given to my principal for input. He made changes and returned the proposal to us for review. After review and a few changes made, the intention is to give the proposal to the Board of Education in January, 2015.

I do plan on sharing my data with the board if the board so desires to see it. If not, the math department will use this information to improve instruction and move forward from here.

CHAPTER 5

CONCLUSIONS AND LIMITATIONS

This project was a very eye opening, stressful, fun, and helpful experience. When I initially started this endeavor I wanted to assure that every student had the tools to be successful in my math classroom. Our school highly recommends that student purchase their own calculator during their high school experience. Due to many factors, we have seen an increase in need from the school to provide these calculators. At the secondary level, we have two classroom sets of calculators at the middle school level and approximately 20 calculators available for a year checkout at the high school level. The librarian in the high school media center came to me this year with concern that more kids are asking for calculators than are available. The librarian and myself approximated that 15 – 20 students were still without calculators because they are not available at our school.

This news only solidified my desire to have more calculators available for our students. As I stated before, calculators themselves will not improve scores. We as teachers need to continue to use them every day in our instruction, teach them how to use the tool appropriately in any given context and never give up on the instruction of math

and calculators alike. If students do not have calculators, the learning process is crippled directly from the start.

LIMITATIONS

Math department meetings, professional development days, proposals, board meetings, administrators, and the inability to write a grant at Glen Lake Community Schools have been at the forefront of my limitations for this project. When dealing with a school, which is a nonprofit organization, they have rules and policies that must be followed in order to make necessary changes. I was able to overcome these limitations piece by piece, because on February 9th, the Board of Education approved the purchase of a classroom set of calculators for the 2015 – 2016 school year.

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