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2012

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UNIVERSITY OF CALIFORNIA, SAN DIEGO

Transforming Students into 21st Century Thinkers through an

ASL Curriculum

A thesis submitted in partial satisfaction of the

requirements for the degree Master of Arts

in

Teaching and Learning: Bilingual Education (ASL-English)

by

John C. Brooks

Committee in charge:
    Tom Humphries
    Bobbie M. Allen
    Carol Padden

2012

The Thesis of John C. Brooks is approved and it is acceptable in quality and form for publication on microform and electronically:

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ABSTRACT OF THE THESIS

Transforming Students Into 21st Century Thinkers Through an

ASL Curriculum

by

John C. Brooks

Master's of Arts in Teaching and Learning: Bilingual Education (ASL-English)

University of California, San Diego, 2012

Professor Tom Humphries, Chair

This writing explores some of the challenges educators of Deaf children are facing in classrooms across America. The 21st century has brought unprecedented levels of diversity to classrooms and Deaf students are not immune to this phenomenon. Social learning is at a premium as students face challenges in their overall development. The identification of these challenges is followed by a

discussion of innovative instructional methods such as: scaffolding, cooperative

learning, and inquiry-based instruction. The use of these methods is explored in a

bilingual classroom environment with both American Sign Language (ASL) and

English. The reader will gain some insight on how these methods can help build a

classroom environment rich with social learning opportunities that leads to higher

academic success. The findings of this study will reveal that Deaf students value

their language exposure. At the same time, the implementation of a social

curriculum is a task that requires an extensive investment of time. Regardless of

socioeconomic and ethnic status, students from all walks of life need time to reflect

on what they have learned while developing critical thinking skills. These critical

thinking skills will help position them to succeed academically.

I.   Introduction

The arrival of the 21st century has brought on an increasingly complex

society in which Deaf and hearing children alike are faced with during their

schooling years and beyond. Society has evolved to the point where children are

required to interact with people of different backgrounds including but not limited

to: gender, race, ethnicity, sexual orientation, and immigration status. As a result,

the child's social skills are being put to the test in earlier stages of development.

Deaf communities across America are not immune from this phenomenon.

Through direct interactions with Deaf students, some insight will be offered

on how they face additional challenges in the area of social learning. Social learning

is an integral part of educational development where educators must invest a

significant amount of time in preparing the child for their eventual exit from the

academic world into society. This is no small task considering the additional

burdens placed on educators to meet mandated standards.

This project will provide some background on the challenges that Deaf

children face in their home environment, unlike their hearing counterparts, namely

lack of communication access and language exposure. In my most recent

placements, I had the opportunity to teach both Deaf and hearing children at the

same grade level, in both collaborative and separate settings. My early observations

indicated that the Deaf children presented more behavior issues, were in need of

more individualized support in both social and academic content.

I would like to get down to the root cause of this problem by examining their home backgrounds. A variety of factors will be brought up to frame some questions related to the overall development of the Deaf child in a social setting including but not limited to: the parents, the support of a bilingual environment or lack thereof, and the frequency of using American Sign Language (ASL) as a means of communication to reinforce certain behaviors.

Some of the early ideas in conducting this study include providing a survey to students to gain some insight on their family demographics and use of ASL. Based on these findings, a curriculum will be established to balance required academic standards with opportunities for students to practice socially appropriate behaviors. Activities that focus on learning about different cultures will be presented in the classroom. Role play activities that require students to participate in demonstrating appropriate behaviors will be used.

This curriculum will be designed with several learning goals in mind. One of the first goals is to create learning activities that help students develop an increased awareness of how people from different backgrounds interact. Another learning goal to be achieved through this project is creating and establishing a forum for the student where they can develop their critical thinking skills that require the use of prudent judgment and reducing impulsive behaviors. The desired end result from this curriculum is to allow students to reflect at the end about connections they have made in functioning within different environments. At the same time, the student will take note of these connections they made over the course of the curriculum and

incorporate this into their day-to-day routine in becoming more socially responsible citizens.

Through this curriculum, students will have the opportunity to participate in the evaluation of classroom activities. They will identify the overall effectiveness of these instructional activities in enabling them to make meaningful connections to subject content matter.

Connections will be made to a variety of learning theories that foster a productive learning environment. These theories will be put to practice in the classroom on both social and academic content. Progress will be recorded on the students' performance and frequency of behavior incidents. These recordings will support the need for a social curriculum with the Deaf student audience who may or may not be lacking that guidance in the home environment.

There is a gap in the amount of research conducted on the overall social development of Deaf children who are raised in varying home environments. There is a wealth of information available on Deaf children who are mainstreamed and how they fare in classroom settings with their hearing counterparts. Conversely, there is a lack of research available that differentiates between Deaf children of Hearing Parents (DCHP) and Deaf children of Deaf Parents (DCDP). Given that a larger proportion of DCDP are sent to the residential Deaf schools by their parents, this study will attempt to dissect several phenomenon at play, most notably the use of ASL in the home and how that correlates to the overall social development of the Deaf child. I believe that my project will fill the need for providing some guidance to

teachers of Deaf children from diverse backgrounds in addressing social issues while maintaining a classroom routine that meets the rigorous academic standards required.

II.   The Connection Between Bilingual Education and Social Learning

There are many challenges that teachers face in today's classrooms when attempting to achieve a delicate balance between delivering quality instruction and meeting the individual needs of all students including Deaf children. Teachers have to be fully aware of the obstacles that Deaf students face while carving out a path through bilingual education for them to succeed in the academic environment.

In this section we will explore some of the connections where bilingual education can be leveraged in creating a classroom environment that promotes social learning among Deaf children. The need for social learning cannot be undermined in today's complex society. Social learning is a major element in helping Deaf children differentiate between the functions that occur within a variety of scenarios. These scenarios will be discussed in further detail below beginning with factors arising from the home environment.

The need for Deaf children to have exposure to a bilingual education environment has become ever more critical in recent years. According to the California Department of Education, 90% of Deaf children are born to hearing parents who have had little or no previous exposure to deafness (O'Connell, 1997). This fact alone shows that unique challenges are present in communication within the home environment. Many Deaf students do not have that ASL and bilingual exposure in the home environment, which in turn hinders their overall social and educational development.

The idea of bilingual education has long been met with opposition, especially in the field of Deaf education. Opponents of bilingual education incorporating the use of ASL state that there is no written form, therefore the Deaf students can't acquire literacy skills to transfer to a second language hindering their overall development (Mayer & Wells, 1996). This logic is flawed as bilingual education offers greater opportunities for language exposure, which correlates with increased social learning.

As a result, bilingual educators have been expected to wear many different hats in carrying out their duties of enabling the student to develop various skill sets while maintaining relationships with a variety of stakeholders, some of who may not understand the value of bilingual education. This is no small task considering the additional demands placed on the bilingual educator in lesson planning and performing the tasks that are associated with creating a successful classroom environment. A bilingual educator who wears these hats could be expected to serve as an advocate for minority groups, foster positive relations between the Deaf and hearing groups within the school, perform outreach to members of the Deaf community on the benefits of bilingual education, and develop positive working relationships with students in the classroom.

It is widely agreed among educators that effective instruction occurs when time has been invested in learning about the characteristics and backgrounds of his or her student audience including some insight into their abilities and learning needs. Deaf children use many communication approaches that must be considered

in their overall development (Chamberlain & Mayberry, 2000). This consideration to the child's needs and abilities must start as early as their first entry into a classroom. Many children experience delays in language acquisition and social skills due to the limited comprehensible input they may receive at home (Kuntze, 1998; Meier & Newport, 1990).

The diverse needs of Deaf children are further outlined in their variety of home environments and upbringings. Experts have observed that DCDP typically experience better academic success versus DCHP (Strong & Prinz, 1997). This is a direct result of the DCDP using ASL in the home environment with more frequency. On the other side of the coin, the DCHP is more likely to experience language deprivation in their early years due to the lack of exposure to ASL (Meier, 1991). At the same time, the hearing parents may struggle with many decisions that are required to facilitate the development process of their deaf child resulting in a lower level of language exposure. The benefit that DCDP derive from the additional language exposure ties in with the concept of bilingual education which will be discussed in greater detail below.

The bilingual classroom calls for the educator to instill a strong sense of cultural incorporation among the students themselves while maximizing language exposure through teaching practices in both ASL and English. This may require taking initiatives to develop classroom activities that promote cultural awareness and sensitivity towards all students. In this environment, the student is receiving exposure to language and content, which in turn promotes social development.

Students who are confident with their presence and identity are more likely to be engaged in the interactions and learning that occurs within the classroom.

The use of a bilingual-bicultural approach is beneficial in addressing the need for meaningful input and language exposure. Through this approach, Deaf children develop language using ASL so that they can harness this knowledge into helping them become better proficient in the English language. At the same time, critical cognitive skills are built through the use of both ASL and English in facilitating the child's overall social development. This is in line with Jim Cummins' interdependency theory stating that when a child acquires two languages simultaneously, the potential for development increases in a myriad of areas including academic performance and social relations (Charney, 2002). This bilingual development eases the transition for the student in being taught to be comfortable functioning in both the Deaf and the hearing communities.

There is still one constant in the role of the educator, whether bilingual or not, they are expected to deliver systematic instruction that better prepares the child for their eventual exit from the academic world and into society as a positive and productive citizen. A big part of this readiness is for the child to develop a strong sense of interpersonal skills. Daniel Meier provided a quote, "A high level of shared education is essential to a free, democratic society and to the fostering of a common culture, especially in a country that prides itself on pluralism and individual freedom." (Meier, 1997).

One of the biggest benefits derived from the bilingual approach is that children are exposed to and realize the value of diversity in shaping our overall society through language and cultural practices. The bilingual classroom goes a long way towards creating an environment that empowers students from a variety of linguistic and ethnic backgrounds. Many children, especially Deaf, may live in communities where they have limited exposure to people with similar backgrounds and the bilingual classroom is one forum where this gap can be bridged. By bridging this gap through bilingual education, the child is positioned to develop a greater awareness and capability to work with others from varying backgrounds, similar or not. This is a critical skill to possess in exiting the academic world and entering society where they will encounter numerous people from different ethnic and linguistic backgrounds.

Using these ideas that support the use of bilingual education, the next section will contain a discussion on the rationale of a curriculum incorporating bilingual-bicultural practices will be designed to address these needs for social learning among Deaf children in the classroom environment. This curriculum will be discussed in greater detail in latter sections of this writing.

III.   Rationale for Investing Time in Social Learning

In the academic environment today, constant pressure has been placed on the educator to ensure that their student audience achieves certain performance benchmarks in the form of academic standards. Certain political movements in the field of education have proven detrimental to creating an ideal classroom that promotes comprehensive learning of academics and social behaviors. For instance, the passage of the No Child Left Behind Act has reformed classrooms into learning centers. The focus on these learning centers has been to prepare students for standardized tests that measure academic performance while disregarding the importance of teaching socially appropriate behaviors. This section will reveal why it is important to invest time in social learning in Deaf classrooms starting from a young age.

Statistics show that 96 percent of Deaf children are born to hearing parents (Hamers, 1998; Moores, 2001). When considering this statistic, one must ask are these hearing parents typically familiar with ASL and the practices of the Deaf culture? The answer is a resounding no, as the large majority of parents are not prepared to take on the challenge of learning a new language while applying it in facilitating the overall development of their child. Further complicating matters is the additional investment of time that is required on the parents' part to learn and acquire this language while considering the additional needs of their Deaf child.

The inability to use sign language requires an extensive learning process in acquiring a new language and learning about the Deaf culture. This does not happen

overnight and has an impact on the dynamics of the parent and child relationship. This chain of events immediately puts the Deaf child at a disadvantage when considering their overall social and educational development. As a result of the parents not knowing ASL or attempting to learn, the quality of communication is below par compared to what the hearing children counterparts may receive from their parents. Many hearing parents may learn simple gestures and signs never becoming fully fluent giving up after taking a few introductory courses, or in many cases not use ASL at all. The use of ASL is critical for the Deaf child to provide them with the needed language exposure that helps develop their own personal identity. This language exposure is the source where Deaf children learn about the norms and values that shape the society in which they live in.

As a result of this sequence of events, when many Deaf children enter classrooms at the early ages, they are already at a disadvantage in many areas including learning socially acceptable behaviors and the acquisition of critical academic content such as reading ability. This alarming trend continues throughout the early childhood years into the later stages of high school as evidenced by statistics that have been provided on Deaf high school graduates nationwide. Again, reference must be made here to the home environment where families typically do not take on the daunting task of learning ASL which helps ensure a higher quality level of communication in the home environment with their child.

Teachers in the field of Deaf education often have to wear many different roles by investing additional time in teaching appropriate social behaviors. This

initiative has become even more challenging in this day and age of meeting expected

education standards as defined by politicians, education administrators, and

schools. It has been reported that a teacher typically spends 96% of classroom time

focusing on academic content tasks while the remaining 4% is spent on social

learning (Gibbs, 2001). If the Deaf child does not receive adequate support in the

home environment then how are they to acquire appropriate social behaviors in a

classroom that only invests 4% of its time to this important area of development?

This phenomenon is not solely limited to Deaf children. Like their hearing

counterparts, Deaf children need a nurturing school environment with numerous

opportunities to develop meaningful working relationships with teachers and other

peers. An organization called Collaborative for Academic, Social, and Emotional

Learning (CASEL) has provided strong evidence for the need of social learning.

CASEL conducted a study with several hundred schools to identify correlations

between how social learning leads to higher academic success. Conclusions were

made in the study that when an institution implements an universal effort to

incorporate social and emotional learning (SEL) in its instructions, students

reportedly demonstrated higher levels of social development and academic

performance (Durlak, Weissburg, Dymnicki, Taylor & Schellinger, 2011). This is

especially important with Deaf children who may face additional obstacles in their

overall social development.

The next section will explore research that reveals challenges occurring in

Deaf education. Further information will be given on how bilingual education is a

valuable tool in providing children with ample social experiences combined with

enhanced academic learning.

IV.   Tying Academic and Social Learning Together

In this section, reference will be given to a number of writings that illustrate the challenges of Deaf education in classrooms across America in striving to meet prescribed academic standards. These academic standards are often established by policymakers and educators who do not have sufficient knowledge of the challenges unique to Deaf education. Reading and literacy development are contingent upon language exposure that begins in the home environment. This problem is not solely limited to families with Deaf children native to America, but also immigrant families due to a myriad of factors that may include: the lack of language exposure and not being aware of the resources available to them. This section concludes with findings that reveal the capabilities of a bilingual educator in tackling these challenges in the Deaf classroom.

Deaf education experts have long been faced with the scrutiny of under-achieving students. According to surveys done by the Gallaudet Center for Assessment and Demographic Studies, approximately half of Deaf high school graduates throughout the United States read several grade levels below their hearing counterparts at the time of their graduation (Allen, 1994). This is an even greater dubious distinction from statistics revealing that 35% of high school graduates in America read at a proficiency level equal to the 12th grade reading level (National Center for Education Statistics, 2005).

Researchers have proven time and time over again that there is a direct correlation in a child's reading development and how they perform in school. When

the hearing parent does not possess adequate ASL skills, how are they to read to their Deaf child? How will the child engage in family conversations that promote the use of language and social learning? This lack of language exposure without a doubt has an impact on their overall development in learning and acquiring socially acceptable behaviors in a variety of settings.

This phenomenon is magnified when considering the influx of immigrant families with Deaf children that are emerging in classrooms across America. There are many factors that weigh into the success or failure of the DCHP especially out of an immigrant family. Immigrant families regardless of their status as being Deaf or hearing may not be aware of the resources available to them. These resources such as schooling and community outreach groups are a few of many key elements required in providing a rich environment to the Deaf child with abundant social learning opportunities combined with language exposure. The parents may not possess adequate English skills making the language barrier a challenge to educate them about the benefits of ASL and immersion into the Deaf culture. Like their American counterparts, they typically face the prospect of not getting enough information about the challenges of raising a Deaf child.

A bilingual educator who is well-versed in effective bilingual practices has that critical base of knowledge that is needed to establish a positive rapport with families who do not use English. This may include performing outreach in the form of finding interpreters to fit the families' language needs and ensuring that these families better understand their child's deafness while making empowered

decisions on the educational placement of the child. At the same time, the parents will have increased opportunities to be involved in contributing their ideas toward the Deaf child's educational development.

This outreach provides the bilingual educator with the tools and knowledge that are needed to identify their students' characteristics and performance indicators. It is critical that any educator, bilingual or not, have some knowledge of children's lives outside the classroom to be able to create ideal learning scenarios (Delpit, 1995).

The problems that immigrant families and their children face are not immune to Deaf children. A Deaf child who comes from an immigrant family may have minimal language exposure due to their limited interactions with the dominant cultures in America. Furthermore, their own cultures may or may not place as great an emphasis on the use of language in the home environment. This lack of language exposure makes their transition into the dominant culture even more challenging as they attempt to learn about the norms and practices of everyday life in a new society. This magnifies the need for a language-rich classroom incorporating educational practices that are in line with the bicultural-bilingual philosophy.

In summary, the field of Deaf education faces unique challenges not only in meeting academic standards but weighing in the needs of the students as far as teaching socially appropriate behaviors. In considering these problems that Deaf children face, connections will be made to literature for curricula and materials that will be used in this investigation.

V.   Key Learning Theories

This section will cover some learning theories that have been identified from reputable sources who work in varying areas of expertise. These learning theories will be used to paint a clearer picture of the correlation between bilingual education and social learning. The practices of scaffolding, cooperative learning, inquiry-based instruction, and tapping into students' funds of knowledge are all discussed in greater detail below.

Each classroom is unique in its needs and this phenomenon includes Deaf students. In considering the needs of the Deaf student audience, the teacher needs to ensure that they are fully engaged in the tasks at hand within the classroom. When a student is engaged, they are positioned to achieve a higher level of empowerment. Jim Cummins states that students who are empowered develop a better cultural identity which translates to social learning as well as critical academic knowledge (Cummins, 1986).

Scaffolding has been identified as an effective way to offset the obstacles that learners face in taking on new tasks. The practice of scaffolding aligns with the concept of zone of proximal development, also known as ZPD. ZPD was introduced by Lev Vygotsky, a Russian psychologist in the early 20th century. Vygotsky argued that language is a critical component in helping educators identify the purpose and intent behind their student's behavior. The application of ZPD and scaffolding requires teachers to gradually release responsibility as the learning progresses. (Vygotsky, 1978). This concept is now widely used in classrooms by teachers in

assisting their students on new tasks. Scaffolding has proven effective with many Deaf students who have received a reduced amount of language exposure outside the classroom. Scaffolds come in many forms such as modeling and prompting which will be used throughout this curriculum.

For instance, the teacher will provide students with a common scenario where they may encounter a conflict with one of their peers. Prompting questions will be presented to the student audience such as: how would you express your concerns, what actions would you take to resolve the problem, what actions would you not take and why? Once the students have had time to reflect, modeling in the form of role play would take place. It is imperative that the students model behavior they think fits in with how the problem can be resolved as opposed to demonstrating what not to do. This positive reinforcement promotes learning while preventing impulsive behavior and at the same time helps the teacher stay on task.

This role play ties in with cooperative learning and inquiry-based instruction. Cooperative learning can be defined as organizing classroom activities where students work in groups to complete tasks collectively. David and Roger Johnson have identified five key elements that should be incorporated in cooperative learning. These are: positive interdependence, face-to-face interaction, accountability of the individual and group, interpersonal and small group skills, and group processing (Johnson & Johnson, 2001). Positive interdependence occurs when students come to the realization they need to rely on each other to complete a task. The second element in cooperative learning face-to-face interaction gives students

the opportunity to exchange ideas with each other while applying social skills in maintaining meaningful dialogues. At the same time, accountability requires that all members of the group make a contribution and continually assess their performance. Through these efforts, the students develop their interpersonal and small group skills. Last but not least, throughout the entire task students participate in group processing which requires them to hold discussions on how well they are progressing (Johnson & Johnson, 2001).

Inquiry-based instruction takes place when the teacher presents questions that allow students to reflect (Amaral, O.; Garrison, L.; & Klentschy, M., 2002). Ideas are shared and exchanged among the students in a variety of settings: one-on-one, small groups, or as a presentation to the whole class. Through this learning theory, students gain expertise working in a variety of social settings while realizing the benefit of working with others.

At the same time, it is important to create an environment where Deaf students realize that success is possible. Everybody is capable of making their own individual contributions to the overall success of the group. This is where the teacher should identify and emphasize the funds of knowledge that students have. Funds of knowledge are tidbits of information or skills that students have gained from their own family and cultural backgrounds. For instance, one student may have culinary expertise stemming from their ancestor's cultural practices while another student has acquired skills in auto repair. Other students may come from different backgrounds and not have access to these funds of knowledge. The funds of

knowledge can go a long way into helping students make meaningful connections in social learning and academic content (Gonzalez et al., 2005).

The value of social learning in an academic setting cannot be undermined especially when Deaf children have limited opportunities in their home environment. By using learning theories such as scaffolding, cooperative learning, inquiry-based instruction, and funds of knowledge opportunities will arise in the classroom for the bilingual educator to help students make connections to socially appropriate behaviors.

The Deaf teacher needs to be prepared to take on many roles while being proactive in considering his or her student audience, their demographics, and at the same time creating a classroom environment with activities that promote students to think more critically. In the book "Positive Discipline" Jane Nelson provides us with a quote to think about. "What good is academic learning if young people don't learn to become contributing members of society?" (Nelson, 1996)

VI.   Description of Curriculum

Too often in classrooms across America and throughout the world, students aren't given the opportunity to make valuable connections between academic content and real-life scenarios. This holds especially true in mathematics instruction where much emphasis is given to solving algorithms using a problem-solving sequence. This is further evidenced in research that supports the notion that students under-perform on word problems where the use of language is required.

In the development of this curriculum, careful thought and consideration has been given to the scope of activities offered with several goals to be accomplished. In line with the social development theories supported in the thesis, students will have an opportunity to work in a variety of classroom scenarios. One of the primary goals of this curriculum is to create these scenarios that help empower students to develop their social and critical thinking skills. At the same time, they will be completing tasks that provide opportunities to develop a deeper understanding for mathematical relationships. A second goal would be addressing a need for the use of language in the classroom that fosters social development. This is a challenging aspect in teaching mathematics but can be done through the application and use of word problems. Opportunities to work on word problems requiring the application of mathematical concepts will be presented in the bilingual classroom. There will be less emphasis on problem solving sequences typically seen in traditional mathematics instruction.

   In addition to these activities offered, a third goal is using the power of reflection to help students develop critical thinking skills. During all parts of the learning sequence, students will have ample opportunities to reflect and share in class their learning process. This will be a critical element in determining the success or failure of the curriculum as it is closely tied in with the comprehension skills that students need to develop in becoming socially responsible citizens.

VII.   Evaluation of Curriculum

To support the ideas presented in my thesis, I have compiled a collection of data sources that uncovers evidence of progress being made by students from the inception of the curriculum. These sources include: surveys to establish student demographics, field notes, and artifacts of student work. Each of the three data sources will be discussed in detail.

Part of my thesis argument is that a significant number of Deaf children of Hearing parents are at a disadvantage in their overall language and social development. This has an impact in the classroom and often is neglected when considering student placements in classrooms throughout America. I used the survey instrument as a means of identifying student demographics associated with this phenomenon. This survey instrument was distributed to students for their completion during the first week of my student teaching placement. Prior to distribution, I informed the classes that this survey instrument was being used for the purpose of gathering information about them in an effort to get to know them better. A copy of this survey instrument can be found in Appendix A.

The students were told that teachers who seek out opportunities to learn about their students are positioning themselves to provide an enhanced level of instruction that is tailored towards the needs of the audience. In addition to student demographics, the survey instrument was designed with questions that provide a picture of the frequency of language use in the home environment.

These questions attempted to explore and identify some trends between the use of the students' primary language, ASL and how that impacted their social development and academic performance. Students were polled on their current residential arrangements and whether or not they lived at home during the week. This is a significant amount of time in the daily life of the individual student and where they receive the majority of their language exposure. Other questions in the survey instrument were framed to determine whether or not they used ASL in the home.

The data obtained from the survey was beneficial in that it gave me some valuable insight into what demographic patterns existed within the student audience in regards to their language exposure, prior schooling experience, and their overall perceptions on ASL. It came as no surprise that a large majority of the students identified that they preferred ASL as their primary mode of communication. This statement alone shows that students value language exposure and this leads to an enhanced level of social learning.

The second form of data collection focused more on what was taking place within the classroom. Field notes were taken to record incidents that occurred during instruction of the curriculum such as student responses and interactions that demonstrated evidence of social learning. These field notes came in different forms which are intended to help the reader make connections between what was taking place in the classroom while better understanding the arguments presented in this thesis.

The majority of my field notes were taken after class each day. These notes focused on a broad range of activities and interactions that occurred before, during, and after school hours both inside and outside of the classroom. These activities included but are not limited to: classroom dialogue, student responses, student reactions to content presented in the classroom, social learning meetings with students outside of class, and discussions with the behavior adjustment teacher on-site at the residential school.

The final form of data is comprised of a collection of student artifacts that demonstrate their learning, or lack thereof, from the curriculum content. These artifacts have been organized sequentially to give the reader exposure to what the students learned at that point in time. As the reader progresses through the artifacts, if the curriculum is successful they should be able to identify patterns and trends that present evidence of student learning. For instance, at the beginning of a curriculum students might not take course content evaluation forms seriously. Once they gain exposure to the idea that they are empowered to make contributions toward improving their own educational experience, they would be more likely to apply their critical thinking skills in submitting evaluations that pinpoint areas of success and needed improvements.

A significant number of student artifacts are presented in the vacation planning project which was the culmination of the social curriculum. Through this vacation planning project, students learned the significance of working with other people and negotiating while applying math concepts they learned.

This collection of data is intended to support the ideas presented in the thesis while at the same time giving the reader a better idea of how the activities offered in this curriculum are tied in with the goals of the thesis. Through analyzing the data presented, the reader will be able to determine what transformations have taken place within the classroom.

VIII.   Curriculum Implementation

The curriculum was used in four of the six classes I taught. Lessons that tied real-life content to mathematics were used throughout the curriculum. The students had numerous opportunities to work in different settings: individually, small groups, and as a whole class. By using this approach and applying real-life content, opportunities for social learning were maximized.

The very first day of my teachings I established a tone in the classroom by explaining my expectations to the class and probing them about the classroom rules that were set in place by my cooperating teacher. I provided all of my classes with a course syllabus that outlined some of the concepts we would be covering. Classroom expectations were outlined and I encouraged open discussions related to the math.

Students were presented with evaluation rubric handouts and were informed that these would be used throughout my teaching period. The purpose of these rubrics was explained to the class in evaluating what and how they had learned. At the bottom of the rubric, they were required to provide written evidence in the form of two or more sentences of one idea they had learned from the lesson provided.

During the early part of my student teaching placement, I took some time to review the mathematical concepts being taught and the proposed schedule. My cooperating teacher and I negotiated out a timeline for the activities covered in my curriculum. I planned out a sequence of activities that was intended to supplement

the mathematical concepts being taught according to the prescribed grade standards. These activities are described in detail below.

<u>Activity A – Zillion discussion</u>

In this activity, I led a discussion with the students on the numerical value of one zillion. They had been learning about exponential powers and scientific notation in numbers. The word "zillion" is commonly used in society nowadays to express a very large number. However, many students and adults alike do not know that it has no real numerical value.

This activity was introduced to the class by explaining that we would find out what the number "a zillion" meant. I wrote a series of numbers on the board starting with one million, ten million, all the way up to 100 trillion. In the discussion, students were required to apply their listening skills and mutual respect toward other people's views. Students were allowed to provide their thoughts on each of the numbers. Once a number larger than a trillion was reached, the students started guessing it was a zillion. I wrote down one zillion and polled each student in the class on what they thought the number was.

One key observation during this lesson was that students were more concerned about what was right and what was wrong. There was a lot of finger-pointing going on among the students. Towards the end of the lesson, I made it a point of emphasis during the discussion that sometimes math is not about finding the right or wrong answer. It is about how we get to the right answer and sometimes we learn something new by listening to other insights. In addition, I established expectations for the students to have respectful discussions in class. All

students can learn off each other which is a product of developing critical thinking skills and learning how to negotiate with other people, a necessary skill in today's society. The lesson was wrapped up when I informed the class that "zillion" was merely a slang word and it did not have an accurate meaning to it.

Activity B – Salary comparison

In this activity, the students were presented with a short story of a teenager taking a two-week summer job mowing lawns. The teenager was presented with two salary scenarios to choose from by the employer. In evaluating the two salary scenarios the students were required to compare an arithmetic sequence and a geometric sequence.

This activity emphasized critical thinking skills among the student audience, evaluating option A against B. In option A, the salary started at $2 for the first day and grew by $2 for each subsequent day. In option B, the salary started at $0.02 for the first day and doubled for each subsequent day. Students were polled on which option they thought would be better. The majority of students chose option A based on the higher starting salary.

The next step in this activity was to pair up the students in groups of two and they worked together to calculate the total salary. I picked out the partners and they were informed that they would be expected to work together on the tasks involved in this lesson while holding open discussions about what they had picked up in evaluating the numbers. The students were instructed to calculate the total salary for both salaries using only the first week. Once the calculations were made, the

students were then polled again if they wanted to stay with option A or change to option B detecting a pattern in the numbers represented. At this point, option A was still higher but was losing ground to option B. I informed the students that regardless of their answer being mathematically correct or wrong, they were to take pride in their response while at the same time being respectful of other groups that might have disagreed with their decision. Once recording the student responses, the partners were instructed to switch roles and calculate the second week of salary. It was at this point that the students realized that option B yielded a more favorable outcome and more earnings overall.

Towards the conclusion of this activity, I asked the students to reflect on what they had learned. Each group shared one idea and their input were again recorded on the smartboard for all of the class to see. My observations revealed that students were mocking each other for getting the answer wrong. To wrap up the lesson, I led a discussion on how it is not always possible to detect the right or wrong answer immediately. Critical thinking and analysis are needed in mathematics. The students would be facing many decisions like this in future years when they became adults, thinking about major purchases like choosing loan rates for a house or a car and evaluating several job offers.

The students responded favorably in sharing their experience observing a negotiation taking place on the purchase of a car. Questions were asked about buying a car and why car dealerships try to negotiate. The students were making connections to real-life content while grasping the concept of negotiation. During

these discussions, I identified that further support was needed in students developing their listening skills and being respectful of each other.

Activity C – Word Problems in Math

Word problems are one of the more challenging aspects of mathematics instruction. However, they are necessary for students of all age levels in ensuring a successful preparation for mathematical applications in real-life. I wanted to incorporate an activity in the curriculum that continued to tap into the social development of the students. This activity required them to work in small groups tackling a pair of word problems then they would present their findings to the rest of the class.

A list of ten math problems was created and handed to the class. A copy of this can be found in Appendix C. Each small group was assigned two problems. They were informed they would have time in class to work on these problems and they would have to present their findings. I explained to the class that for this task, their grades would be based on several factors including: participation, presentation, and accuracy.

A number of students in some of the classes where this curriculum was applied had presented questions on what I meant about the presentation. This was my first evidence that the students were starting to think about what I was trying to accomplish in providing mathematical instruction while facilitating the development of social skills and critical thinking. In responding to these student queries, I emphasized the importance of demonstrating appropriate behavior

during ongoing presentations by other groups. If students were not presenting, they were expected to listen attentively and ask meaningful questions instead of dismissing the other groups. By establishing these expectations, students responded more favorably knowing that the teacher was observing all participants in the class to ensure an environment full of learning and respect towards one another.

The student presentations were moderately successful. Part of the challenge was maintaining the students' involvement once they had solved their assigned problems and completed their presentation. Reflecting on this activity, I think it would be more successful if this was applied throughout the course of an academic year versus doing it just one or two times. Word problems can be written for many different mathematical concepts at varying levels of difficulty. By offering multiple opportunities to the students, their confidence in solving word problems would increase and they would also make connections to the social concepts being taught. At the same time, the routine of making word problem presentations would be beneficial to the students in building their social skills in terms of becoming a respectful listener. Listening skills are a critical component of being a socially responsible citizen in today's society and students should be given ample opportunities throughout their education to develop this skill set.

Activity D – Earth Day

This activity was not part of the original curriculum I had designed prior to starting my student teaching placement. Earth Day offers many teaching opportunities and the school wanted to take advantage of this. As a result, science and mathematics classes were consolidated into larger sized groups on this day.

These placements offered me the opportunity to teach a new body of students which I did not expect. In some cases, students among three grade levels varying from sixth to eighth grade were put together. I assisted in creating and designing an activity that emphasized group work following the concept of cooperative learning. In this task, students were held accountable for conducting some data analysis that required critical thinking and reflection. The data analysis tasks at hand required them to apply the elements of cooperative learning discussed earlier in this paper including but not limited to positive interdependence and face-to-face interaction.

Prior to the lesson launch, I implemented a discussion with the large sized groups asking them to share their ideas on what Earth Day meant to them. Ideas were recorded on the smartboard for all students to see. It was then explained to the students that a story related to Earth Day would be shared and they would be participating in a data collection activity afterwards.

A story was presented to the class by myself and another teacher using ASL to tap into the varying language and mathematics aptitude levels of the student audiences. This story depicted a man who went to a lake one day during fishing season. The lake was clean and pristine. He had no problems catching fish. The next year, he returned to the same lake to find a little bit of litter. He did catch quite a bit of fish but it proved a little more challenging and time-consuming. The third year, he returned again to see the lake becoming progressively worse with litter scattered around. The number of fish he caught was again in decline. This pattern continued

until one year he decided he had enough and wanted to express his concerns with the government.

The second part of this activity took place when the students were asked to pair up in groups of two. I established the partners and explained to the class that I would be expecting them to work well as a team in completing the tasks in this project. There would be two roles, one would record the data while the other would conduct the analyses needed. Both partners were also expected to discuss openly what kind of patterns they had seen in the data collection process. Once this was complete, the class as a whole would share their findings. The students were expected to interact positively while listening attentively to insights offered by other groups, thus creating a rich collaborative learning environment.

Once the behavior expectations were established, the students were informed they would be exploring the concept of population decay. Each group would be receiving a small cup filled with 30 M&M candies and a data recording sheet. A copy of this data recording sheet with written questions can be found in Appendix D. The M&M candies would each represent one fish. Modeling was provided to the students on the data recording procedures. Each group was to record the number of fish alive after each year based on a roll of the cup. If an M&M landed with it's M facing down, then that fish had died. They would take a tally of the total surviving fish and repeat the process for six more years.

Once this procedure was complete, modeling was again provided to the class that they would be exploring the concept of population growth. This time each

group would start with two fish in the cup in an attempt to reproduce. If the M&M landed face up, a baby fish was born and added to the mix. The student groups reversed their roles and again recorded their data based on seven trial runs.

After all student groups completed their data recording, they worked together in answering written questions and reflecting about the difference between population decay and population growth. They recognized that it was much more challenging to grow a population once it had been diminished by living practices that harm the environment. This lesson was wrapped up by outlining the importance of practicing good living habits in our daily lives to preserve the environment and the planet Earth.

The biggest challenge that arose from this activity was that many of the students who participated were from other classes. As a result, I had not yet established working relationships with these students nor did I have a grasp on their behavior patterns. Conversely, the students were placed outside their normal classroom environments and routine in working on this activity. Furthermore, they were not familiar with my instructional styles and methods used as well as being placed in a setting with different students. Therefore, their behavior patterns and responses were altered. I attempted to minimize the impact of the new routine by establishing expectations for social skills and working well together in small groups.

Activity E - Citizenship Math

This sequence was designed to enable students to do some data analysis. The school had implemented the practice of "Character Counts". Character Counts is a well-known set of principles that are practiced throughout schools. These principles

are comprised of six pillars. The school added two pillars of character. Each month

of the school year would bring a focus on instruction provided for one certain pillar.

Most of these teachings took place in other classes but upon learning of this

school-wide initiative I wanted to incorporate some of this into my mathematics

teachings. By taking something that applied to the students' lives, it made the lesson

content much more accessible to the students. The students were asked about their

performance reports that were posted on the wall. I took a comprehensive report

from the behavior adjustment teacher and removed the names prior to presenting

to classes. This presentation allowed students to see certain numbers. After a

preview of the data, I started a discussion on why there were no names on the

report. Students were allowed to predict why I had removed the names.

The concept of respect was brought up, which is one of the pillars in

Character Counts. As a whole class, we discussed the importance of respecting one

another. Through the class discussion, students identified that keeping private

information anonymous is a way for people to respect each other. The points that

were brought up during this discussion helped students to make connections in

demonstrating socially responsible behaviors and following through on school

expectations. Once this was covered, we moved on to discussing the different data

categories on the report.

I asked the students about the six different categories of data on the report. A

copy of this can be found in Appendix F. The first category is Self Improvement Time

(SIT). During SIT, students stay after school to discuss an incident with their teacher

and how this could be resolved. Upon completing the discussion, students fill out a reflection form stating what they would do differently in the future to prevent the incident from occurring again. The second category is appointments that are made by the student to meet with teachers for additional assistance. This is not viewed as a negative consequence. The third category is used to record and track the number of unfinished homework assignments each student has. The next two categories, ParentComm and OtherConcerns are classified as additional communications that take place between the parents and the teacher on an as-needed basis. SoaringTalons is the last category and is a positive reinforcement. Instead of the whole performance report focusing on negative aspects, Soaring Talons was created to provide praise to students for positive behavior patterns that are representative of Character Counts.

Once the class identified all six categories, I asked them to predict which category had the highest number tally based on one month of statistics. They correctly guessed unfinished homework. During the discussion, I wanted them to refer back to the school-wide initiative of Character Counts and identify which of the pillars could be used to represent a decrease in the unfinished homework numbers. The same sequence was done for the other five categories. The end result of this discussion was empowering students to make valuable connections between Character Counts and their performance metrics. For instance, in the unfinished homework category with the highest number of tallies, the principal of the school had identified that he wanted to make this a goal to decrease this by 50% in the next

month. The students were polled on what actions they could take to help accomplish this defined goal. One student, TH suggested the idea of using frequent communications with the teachers outside of class to catch up on missed assignments. These ideas demonstrated the desired outcomes of positive interdependence and personal accountability which are critical social skills to possess both inside and outside the academic environment.

Activity F - BART walking exercise

This activity was designed to build on the mathematical concepts of exploring the relationship between distance, rate, and time. At the same time, it presented an unique opportunity to get outside of the classroom and observe the students in real-life scenarios while promoting socially responsible behaviors. On the day prior to this lesson, I invested some classroom time in explaining to the class the purpose behind the activity and the social behavior expectations that came with it. Some of these behavior expectations were discussed at length including but not limited to: obeying street signals and staying together as one group. The students responded favorably with questions concerning the consequences they would face if expectations were not met, and the liability issues that teachers face if students go missing during school hours.

Each of the four classes participated in this activity where they walked to the local Bay Area Rapid Transit station (BART). This is less than one mile away from the residential school campus. I created a distance tracking sheet for the walking route with a few stops along the way. A copy of this handout can be found in

Appendix G. This tracking sheet was important to the students to explore the mathematical side of the activity and making conversions between different units. At the same time, it also provided the students with a guide on the work they needed to get done during this activity.

The students were expected to measure and record distances using a pedometer and clock as their instruments. They worked in pairs, one student measuring the distance and the other student keeping track of the time while recording the data on a handout that was provided to the class. This handout was beneficial in helping maintaining control of the student groups while providing students with an opportunity to demonstrate desired behaviors by stopping at the marked stop, and working together as an unit in exchanging information and recording data on this sheet.

Once we returned to class, the students would discuss the ideas behind the distance tracking sheet and how they relate to mathematics. At the conclusion of this exercise, I had them fill out reflection forms that allowed them an opportunity to express how they felt about the lesson procedure and what they may have learned from it.

My primary objective from this lesson was to give them some exposure to mathematics outside of the classroom. Prior to implementing the walking activity, I established expectations for student conduct including the observation of street signs and practicing safe behaviors such as staying together as one group and deviating from the prescribed route. My observations during the activity were that

the students were excited to get outside of the classroom and get a break from the routine. This higher level of energy required constant monitoring and management on my part. By breaking up the activity into six checkpoints, it allowed the students to collect their thoughts and I felt this was one of the biggest factors that contributed to the success of the exercise. Students were working together as a team, sharing data with each other, and reflecting on how far they had walked in a given period of time. Once we reached the midpoint of the activity arriving at the BART station, I led a whole group discussion applying some inquiry-based instruction by asking the students about the total amount of time it took to walk the specified distance as well as predicting the amount of time that it will take to get back the same way. Students were encouraged to share their thoughts and listen respectfully to each other. The below is an actual dialogue that took place.

Me: We have just arrived at the BART station entrance. Go ahead and have a seat here for a few minutes. I wanted to start off by asking how far we have just walked?

RL: 0.92

Me: 0.92 what?

AB: Miles.

Me: Oh, so we have walked 0.92 miles?

AB and RL: Yes

Me: So how long did this take?

DO: 32 minutes.

Me: Oh, 32 minutes? OK, do you think this was slow or fast?

AB: VERY slow!

Me: Why was it very slow?

AB: We had to stop and write down our measurements and wait for street light.

Me: So, you think you can walk more than a mile in the same 32 minutes?

DO: Yes, maybe two miles.

Me: Very good. So, how about when we walk back? Do you think it'll take 32 minutes again?

AB: Yes, there's six of us. If just me, it'd take less.

DO: But we don't have to stop again at the same six places again?

Me: No

RL: So if we don't stop, means we can be back there 20 minutes.

AB: Nodded his head in approval.

Me: Ah! So you see. Maybe you're walking the same distance back but it doesn't mean the time will be the same. Maybe the street lights will be faster. Distance, time, and rate are all connected. That's a little bit of what I wanted to show you today. When we get back to class, we will measure our rates both ways. Now let's go back the same way we came, and again we will follow all the street rules we talked about.

Activity G – Vacation Planning / Travel Kit

The final part of the curriculum incorporated some of the math concepts we had covered in the earlier weeks of my student teaching placement. I designed a vacation plan and travel kit project that the students would have to do in anticipation of their upcoming summer vacation. This project had several elements to it: doing Internet research to create a budget, creating pie and bar charts, making a poster that displayed their ideas, and giving a final presentation to the class. The details of the assignment project can be found in the Appendix.

One of the goals of this assignment was to promote teamwork and mutual respect for other people's feelings. I determined that doing a random draw of group members would prevent students from working with their friends who they had a preference for. A number of challenging dialogues arose from this scenario particularly for one class where many group members did not enjoy working together. Some of the initial student responses were very blunt and pointed toward the other person. I encountered and participated in the following dialogues with students in this class.

Group One

K: Drew H's name and turned around in disbelief and disgust after pointing at him.

Me: You drew his name and you will have to work with him on this.

K: I would like to switch partners please.

Me: Sometimes we can't choose who we have to work with.

K: But you can change jobs if you don't like who you are working with.

Me: Maybe but not always. Can you change schools if you don't like working with T?

K: Silence and no response.

Group Two

T: Drew W's name and the two started working together.

W: I'd like to go to Boston.

T: I'd like to go to China.

W: No, we should go to Boston.

T: But I don't know what's in Boston.

Me: So what are some ideas you both have?

W: T obsessed with going to China. I want to go to Boston.

Me: Oh, China, wow. That's fun. Will you two be able to go for $2,000?

W: China too expensive. We should go Boston. I want go to a Celtics basketball game.

Me: You two need to continue discussing and share the decision-making. W continued her aggressive behavior while T remained very passive and reserved on her feelings.

Due to this ongoing friction I witnessed in these groups on the first day in presenting the project to the class, I decided to create a role play scenario for the next class. This role play scenario would model the art of negotiation to the students with my cooperating teacher JN as my partner. JN selected Alaska as her destination of choice while I was intent on going to Palm Springs. We both played out a scenario

where neither would budge on the selection and finally a compromise was reached. There were four decisions to be made in planning out the vacation starting with the site selection. Once the selection was complete, each group had to pick out three fun things to do while on vacation. The compromise was that JN got to pick the destination while I got to pick two of the three fun things we would be doing.

For the remainder of the classes, the student response was very favorable. Students were more willing in working with each other. I observed a subsequent dialogue between Group Two as shown below.

W: If we are going to Boston, what would you like to do?

T: Go to the mall.

W: How much money do you need for the mall?

T: $10

W: OK. I would like to see how much tickets are for a Celtics game.

T: Let me look on the Internet.

While this dialogue indicated some good progress, I was also dealing with a new challenge that arose. Some students were more proficient than others in using the Internet for researching their travel plans. As a result, the pace at which students finished varied widely. In an effort to keep all the students using their time productively, I encouraged them to continue searching the Internet for appropriate pictures that would fit on their poster.

For the sixth grade class, I observed they were less proficient at using Microsoft Excel. I made a decision to start a class one day by modeling on the

smartboard how to use Microsoft Excel in entering the project cost data followed by how to create charts, both in pie and bar form. The students seemed to like the change of pace in using laptops, receiving instruction in the application and use of technology while being able to make the charts colorful to their liking.

The final aspect of this project came in the group presentations. I felt this aspect was moderately successful. The biggest concern I had with the presentations was that the students in all classes did not seem to take the presentations as seriously as the other parts of the project. At the beginning of the vacation project task, I outlined the behavior expectations for the students. These expectations included demonstrating mutual respect toward each other during all stages of the project, working well with their peers, and participating in presentations. All of these elements were a part of their project grade. However, the project itself took two weeks of time from the inception to the final presentation.

When the students started giving their final presentations, I carefully observed their behavior and noted that they demonstrated inappropriate behaviors such as laughing and mocking. Upon recognizing these behavior patterns, I regained control of the classroom by emphasizing the importance of listening skills and having mutual respect towards one other. From this experience in the first class, I made it a point of emphasis to invest some time at the beginning of class for the other groups who were about to present. This time was spent to remind them about the behavior expectations that were outlined at the beginning of the project. Once

these expectations were established, I noticed a marked improvement in overall

student conduct.

IX.   Results of Curriculum

The first source of data I used in collecting demographic information of my students was a survey instrument. This survey instrument gave me a working knowledge of their backgrounds and experiences both inside and outside of school. A total of twenty nine students from the participating four classes submitted survey responses. In evaluating the data, 20 out of the 29 students lived in the residential cottage facilities at the school while the other 9 classified themselves as living at home and commuting on a daily basis.

In comparing the family backgrounds of the students, 17 out of 29 students identified themselves as having parent(s) who are Deaf. However, only nine of the 29 students had Deaf siblings. 17 out of 29 students revealed that ASL was used among family members while five of the remaining seven responded that ASL was sometimes used. The remaining seven students stated that no ASL was used in the home environment.

The most revealing statistical information from this survey instrument came in the question asking students what language they preferred to use. Twenty five out of 29 students selected ASL as their primary preference while the other four did not provide a response. This dataset alone reveals the importance of ASL and how students perceive it as being a valuable tool in both academic and non-academic settings.

In conducting further analysis on the educational background of the students, it was identified through the survey instrument that only nine out of 29

students began their education at this school. The remaining 20 started at a different school and joined this classroom at a latter time. This is an important factor to consider in the overall educational and social development of a student. Change in the form of educational setting and home environment plays a role in how they move through daily life developing their self-identity and perceptions of society as a whole.

Taking these demographics obtained from the survey instrument, I wanted to identify possible trends in student behavior and learning habits. These trends would then be used as leverage in enhancing my overall instructional planning and improving the overall effectiveness of the curriculum.

For instance, I wanted to gather some detailed information on their previous schooling experiences and identify what type of language exposure they had received. This correlates with my findings that show additional language exposure facilitates social development. Furthermore, I wanted to gather some input on their general perceptions on the use of ASL and their preferred method of communication. I found this data beneficial in my instructional planning and delivery.

My second data source comprised of field notes that recorded student observations and interactions both inside and outside of the classroom. When comparing the incidents that took place at the beginning of the curriculum where students continually mocked each other and showed disrespect for others, I observed a marked improvement in the overall respect students had towards each

other. This respect was demonstrated by a lower level of interruptions by students in allowing one person to speak at a time in the classroom environment. Students were beginning to recognize that while not everybody had the same opinion or viewpoint, they would eventually be given an opportunity to explain their views. However, some of this improvement was negated by the continued horseplay that takes place among students outside of the classroom when they are not being monitored by adult figures.

This is an element of the social curriculum that would be more successful if given more time. Students need that extra time to make a connection between their conduct both in the classroom environment and outside school hours. The curriculum has to be integrated constantly and the educator has to recognize teaching opportunities as they arise throughout the school day, all day and everyday.

The third element of data in my curriculum, the student work artifacts was intended to portray what students had completed and allowed additional opportunities for reflection. In one particular class, I had two groups of students who were working on their travel planning projects, one group had completed theirs while the other group was lagging behind. Both groups were to give their presentations in class that day and both were to give their presentations that day. I provided praise to the first group in completing their project and doing it well. On the other hand, the student in the second group had not managed his time well and as a result, didn't have the project ready on time. The artifacts from the first project

were used as a model to help the student complete his project. At the same time, I had a dialogue with the student to identify and reflect on the behavior patterns that took place and what could be done differently next time. This discussion proved beneficial as the first group observed this dialogue and saw the positive ramifications of managing their time efficiently. At the same time, this dialogue provided additional support to the second group to recognize the changes that needed to be made.

Putting these three elements together and considering the results of the curriculum, I felt each of the four classrooms had varying levels of success with their progress in social development. This was due to several factors most notably peer pressure. Students in the middle school grade levels are developing socially and jockeying for an elevated level of status among their peers. This carries over to the classroom as their behaviors are easily influenced by others. The activities portrayed in this curriculum attempted to establish a line of thinking in the students about how to maintain an environment that recognizes the contributions of each individual in turn reducing the impact of peer pressure.

In many cases, peer pressure yields unfavorable outcomes and impulsive behaviors. The instruction in this curriculum promoted thought processes that work against impulsive behaviors. When students push their impulsive behaviors to the side and start thinking about their language and actions, this is in line with higher order thinking as defined by Jim Cummins in his article on empowering minority students (Cummins, 1986).

One significant deficiency in this curriculum was that students in certain classes had significantly less experience giving presentations than others. The impact of peer pressure was evident when students were giving presentations as mocking was commonplace. This had a drastic impact on their listening skills and ability to create an environment which was respectful for all. My observations showed that students did not take their presentations as seriously. In the first class where expectations were not outlined immediately prior to presentations, students were mocking each other. On the other hand, in latter classes time was invested in reminding the students that their behaviors would be monitored even when they were not giving presentations. This helped maintain control of the classroom and minimized interruptions to the student presentations. As a result, more time had to be invested in providing students with modeling and stating the importance of presentations in their future pursuits. At the same time, this time was a necessary ingredient in making a successful recipe of a socially responsible learning environment that demonstrated mutual respect for all.

My findings also discovered that some uncertainty is beneficial to students who may be acclimated to a certain learning routine. This was clearly evident in the Earth Day activity where students from various classes were grouped together. These students may have been acquainted with each other but they clearly had not worked together.

Through this experience, the lower grade students were able to gain some insight from their peers. On the other hand, the higher grade students recognized

that the math aptitude of their peers was not up to par and they wanted to serve as good role models for these lower grade students. This created a mutually beneficial learning experience for students from both sides of the spectrum.

An area of improvement in this curriculum would be to implement additional opportunities for word problem activities and incorporating a presentation routine into these activities. Instead of using this practice exercise once or twice throughout the limited curriculum, students would benefit from having that routine of giving presentations on their word problems. There are many opportunities to create word problems that require the application of different mathematical concepts being taught. This routine would enable students to make more meaningful connections to social content versus just focusing on the right and wrong side of solving math problems.

The aspect of the curriculum in which I felt was the most successful among the students was their work on completing the evaluation rubrics. The power of the rubrics was evident in the quality of feedback that was given. The majority of students take an interest in how their education is presented and this was reflected in their behavior towards student evaluation rubrics.

Several factors played into the success of this rubric. First, I wanted to avoid the possibility of students not taking their evaluation rubrics seriously so they were informed at the very beginning that the quality of their rubrics would count towards their participation grade in the class. Second, students had already been exposed to student evaluation rubrics in prior classes in both previous and current grade levels.

This increased their familiarity with the process and they also realized there was great value in providing quality feedback.

Third, taking into account their prior exposure to student evaluation rubrics in different forms, the students made connections to how their work is evaluated in different ways. Towards the end of the curriculum, they had realized the empowerment they were given in evaluating the learning experience. By the students having a say in their education, I think it helped them demonstrate socially responsible behavior which is one of the underlying goals of this curriculum.

The student evaluation rubrics were used throughout the curriculum primarily to evaluate certain instructional activities as well as the vacation planning project. The questions were designed to enable students to apply their listening skills throughout the course of the prescribed activities. If students did not apply their listening skills, then they would not have been able to complete the assigned rubrics which were made a part of their grade. At the same time, the quality of the student evaluation rubrics provided them with an opportunity to demonstrate socially responsible behavior. My observations of the students when they were completing the rubrics combined with the quality of their responses proved that they took this task seriously.

X.   Conclusion

Reflecting back on the curriculum, I viewed it as a mixed bag of success. The time constraints presented a challenge in meeting all goals associated with this curriculum. I felt the curriculum enabled many students to make viable connections between math and real-life decision making. I view this as a critical element in providing a quality educational experience for students who come from different backgrounds and possess varying language abilities.

In today's challenging environment, there are many deterrents to providing students with a quality educational experience rich with social learning opportunities. Much emphasis is placed on the performance metrics in the form of grades for students instead of their overall social development. At the same time, educators are required to meet prescribed academic standards as defined by their school district. While grades are important in their own right, they often provide an artificial measure of how well students have progressed. Additional emphasis needs to be placed on the value of social development as there is a positive correlation that leads to better academic performance.

Oftentimes, students and educators alike become so focused on their own tasks we do not take a step back to reflect on the importance of presenting real-life scenarios to students outside of the classroom. Practicing and applying these real-life scenarios is key in preparing students to become socially responsible citizens once they exit the school environment and enter society. The social curriculum is a difficult undertaking that requires a significant investment of time both inside the

classroom and outside. The educator should be prepared to observe student behavior throughout the day, all day, and every day. When there are incidents that arise where students are not demonstrating socially responsible behavior, the educator must recognize these opportunities and use prudent judgment in sharing his or her insight with the student.

While the curriculum was without a doubt beneficial for the students, additional time and modeling was needed to yield more favorable outcomes with the student audience. Time is a key element in producing socially responsible behaviors among students in the younger to middle aged group. They need this time to distinguish right from wrong while weighing in the perspectives of adult figures who serve as role models to them both in the classroom and home environment. Given additional instructional time, I would want to incorporate additional opportunities for students to have interactions between mathematics and real-life scenarios outside of the classroom. These opportunities would emphasize the development of listening skills while promoting more critical thinking. While educators' can not control what takes place in the home environment, it is their role to empower students to think about their learning while providing a source of social learning and development.

Ten weeks of classroom instruction with the constant challenges of meeting grade-level standards and dealing with classroom interruptions does not provide much opportunities for hands-on instruction outside of the classroom. When a

student is placed outside their norm, they are more likely to remember the

experience and reflect on why this took place.

XI.   Appendices

Appendix A – Student Demographics Survey

Student Questionnaire

California School for Deaf - Fremont

Student's Name:

Teacher's Name: John Brooks

CLASS PERIOD:

Circle one answer for each question.

Question			
Where do you live during the week?	CSDF Cottage	At home	
Are your parents deaf or hearing?	Deaf	Hearing	
Do you live with your real parents or foster home?	Real	Foster	
Are your brothers and sisters Deaf?	Yes	No	
When you are at home, do you use ASL with family?	Yes	No	Sometimes
If no, how do you communicate with your family?	Write	Speak / Oral	
How do you prefer to communicate?	ASL	Other	

Student Questionnaire

My feelings about math are:

	Excellent	Good	Fair	Poor
As a student, how would you rate your math skills?	☐	☐	☐	☐
As a student, how would you rate your reading skills?	☐	☐	☐	☐
As a student, how would you rate your listening skills?	☐	☐	☐	☐
As a student, how would you rate your skills giving presentations?	☐	☐	☐	☐

Have you gone to CSDF from the time you started Kindergarten? If not, what grade did you start at CSDF?

What are your hobbies and interests?

What other things would you like me to know about you?

_____

_____

_____

_____

Appendix B – Blank Student Evaluation Rubric Form

Student Evaluation Form

Class Period:

	Strongly Agree	Agree	Disagree	Strongly Disagree
Was the activity clearly explained in class?	☐	☐	☐	☐
I found the activity to be fun and enjoyable.	☐	☐	☐	☐
This activity helped me better understand mathematics.	☐	☐	☐	☐
Were my questions about this activity answered?	☐	☐	☐	☐
This activity has made me think about mathematics outside of class.	☐	☐	☐	☐

Write one thing I learned in class today (on the back).

Appendix C – Word Problems in Math handout

Word Problems in Math

Student's Name:

Date:

Period:

1. Peter bicycled 36 miles in 3 hours. How far did Peter bike in one hour?

2. CSDF has a bake sale and each cake costs $7.50. Ms. Newkirk bought five cakes. How much did she pay?

3. Julie, Bill, and Ann all went to the CSDF basketball game on Friday. Tickets cost $7.25 for each. How much did they pay?

4. Elliott's parents gave him $25 to go bowling with his friends. He paid $8 to bowl two games, $3 for bowling shoes, $2 for nachos, and $1.50 for a coke. How much did he have left?

5. If the class took a field trip to the beach 50 miles away, and the bus drove only 25 miles per hour how long would it take the class to get to the beach?

6. Kiki wants to go to Washington DC with her school. The trip costs $2,000. She has $1,400 and needs to sell candy bars to get enough money. Each candy bar is $3. How many candy bars does she need to sell to have enough money for the trip?

7. The CSDF basketball team needs to buy new jerseys. Each jersey costs $75. There are 15 players. How much would it cost to buy jerseys for the whole team?

8. Joe worked 8 hours yesterday, 4 hours today, and will work 5 hours tomorrow. His boss pays him $17 an hour. How much will Joe get paid for this work?

Appendix D – Earth Day Data Recording Sheet

EARTH DAY

Population Decay									
Year	0	1	2	3	4	5	6	7	8
Number of Fish									

1. Write a sentence or two describing any patterns you see in this fish population.

2. If you started with more fish, do you think you would see the same pattern? Why?

Population Growth									
Year	0	1	2	3	4	5	6	7	8
Number of Fish									

3. Write a sentence or two describing any patterns you see in this fish population.

4. What do you think would happen to the population if you were able to continue this process? Why?

Appendix E – Earth Day Work Samples

EARTH DAY

Population Decay									
Year	0	1	2	3	4	5	6	7	8
Number of Fish	30	16	11	6	2				

1. Write a sentence or two describing any patterns you see in this fish population.

   It takes 4 yrs to get all fish dead.

2. If you started with more fish, do you think you would see the same pattern? Why?

   Yes because decrease is faster than increase.

Population Growth													
Year	0	1	2	3	4	5	6	7	8	9	10	11	12
Number of Fish	2	2	3	3	5	6	11	17	21	28	30		

3. Write a sentence or two describing any patterns you see in this fish population.

   It takes long time to increase the population

4. What do you think would happen to the population if you were able to continue this process? Why?

   will make more population

Appendix F – Citizenship Math Summary Report

Summary Report for Date Range: 3/19/2012 to ~~6/8/2012~~ 4/20/2012

Student	SIT	Appt	UnfHmwk	ParentComm	OtherConcerns	SoaringTalons
	0	0	4	0	0	2
	2	1	3	0	1	0
	0	3	3	0	0	0
	9	3	4	0	0	0
	2	4	8	0	0	1
	2	3	1	0	0	0
	1	2	0	0	0	0
	2	0	4	0	0	1
	2	0	3	0	0	0
	4	5	8	0	0	1
	0	2	1	0	0	0
	0	0	3	0	0	3
	4	6	2	0	0	0
	1	2	2	0	0	1
	0	1	0	0	0	1
	1	2	3	0	0	0
	2	1	6	0	0	0
	0	0	4	0	0	2
	1	1	1	0	0	0
	0	0	3	0	0	0
	0	0	2	0	0	0
	3	1	3	0	0	1
	1	2	0	0	0	0
	0	0	1	0	0	0
	1	1	0	0	0	1
	0	1	2	0	0	0
	1	2	1	0	0	0
	3	0	2	0	0	0
	0	1	3	0	0	1
	0	2	0	0	0	0
	0	3	1	0	0	0
		1	1	0	0	0

Appendix G – BART Exercise Form

Distance Tracking Sheet
CSDF Middle School Building to BART Station

Name: _____   Date: _____

Starting Place	Ending	Distance (m)	Feet	Start Time	End Time
CSDF Middle School Building	The Diagnostic Center of Northern California sign				
The Diagnostic Center of Northern California sign	The Orchards Apartments				
The Orchards Apartments	Guardino Drive				
Guardino Drive	Lakepointe Apartments sign				
Lakepointe Apartments sign	BART station entrance				

Appendix H – Student Work Samples

Student Questionnaire

California School for Deaf - Fremont

Student's Name:

Teacher's Name: John Brooks

CLASS PERIOD:

Circle one answer for each question.

Where do you live during the week?　　CSDF Cottage　　(At home)

Are your parents deaf or hearing?　　Deaf　　(Hearing)

Do you live with your real parents or foster home?　　(Real)　　Foster

hearing older

Are your brothers and <u>sisters</u> Deaf?　　(Yes)　　No
young

When you are at home, do you use ASL with family?　　(Yes)　　No　　Sometimes

If no, how do you communicate with your family?　　Write　　Speak / Oral

How do you prefer to communicate?　　(ASL)　　Other

Student Questionnaire

California School for Deaf - Fremont

	Excellent	Good	Fair	Poor
My feelings about math are:		☒		
As a student, how would you rate your math skills?		☐	☒	
As a student, how would you rate your reading skills?		☒		
As a student, how would you rate your listening skills?		☒		
As a student, how would you rate your skills giving presentations?		☒		

Have you gone to CSDF from the time you started Kindergarten? If not, what grade did you start at CSDF?

2grade in 2006 to Now

What are your hobbies and interests?

cheerleader and listen music and hangout with friends and relationship.

What other things would you like me to know about you?

1. i have relationship is Zack Graham in high school CSDF

2. I am very obsessed about cheerleader competition of

my team legue

Word Problems in Math

Student's Name: _____   Period: 3

Date: 4/18/12

1. Peter bicycled 36 miles in 3 hours. How far did Peter bike in one hour?

   36 miles ÷ 3   12 miles
   ─────────── = ─────────
   3 hours ÷ 3   1 hours

2. CSDF has a bake sale and each cake costs $7.50. Ms. Newkirk bought five cakes. How much did she pay?

3. Julie, Bill, and Ann all went to the CSDF basketball game on Friday. Tickets cost $7.25 for each. How much did they pay? $21.75

4. Elliott's parents gave him $25 to go bowling with his friends. He paid $8 to bowl two games, $3 for bowling shoes, $2 for nachos, and $1.50 for a coke. How much did he have left? $11.50

5. If the class took a field trip to the beach 50 miles away, and the bus drove only 25 miles per hour how long would it take the class to get to the beach?   2 hours

6. Kiki wants to go to Washington DC with her school. The trip costs $2,000. She has $1,400 and needs to sell candy bars to get enough money. Each candy bar is $3. How many candy bars does she need to sell to have enough money for the trip?

   2,000
   - 1,400
   ─────────
   600 ÷ 3 = 200 Candy bars.

7. The CSDF basketball team needs to buy new jerseys. Each jersey costs $75. There are 15 players. How much would it cost to buy jerseys for the whole team? $1,125

8. Joe worked 8 hours yesterday, 4 hours today, and will work 5 hours tomorrow. His boss pays him $17 an hour. How much will Joe get paid for this work? $289

Student Evaluation Form

Student Name:
Class Period:

	Strongly Agree	Agree	Disagree	Strongly Disagree
Was the activity clearly explained in class?	✓			
I found the activity to be fun and enjoyable.				
This activity helped me better understand mathematics.		✓		
Were my questions about this activity answered?		✓		
This activity has made me think about mathematics outside of class.			✓	

Write one thing I learned in class today (on the back).

I learn about Feet from CSDF Middle School to Bart Station

Student Evaluation Form

Student Name: ⟩
Class Period: 3

5/11/12

	Strongly Agree	Agree	Disagree	Strongly Disagree
Was the activity clearly explained in class?		☑		
I found the activity to be fun and enjoyable.		☑	☑	
This activity helped me better understand mathematics.		☑		
Were my questions about this activity answered?		☑		
This activity has made me think about mathematics outside of class.		☑	☑	

Write one thing I learned in class today (on the back).

I learned from class to figure out to divide the dime when we walk to, bond and back to CSD campus.

Appendix I - Vacation Planning Project Description

Vacation Plan Guide Assignment

Student Name: _____

Class Period: _____

Assignment:

<u>Part One</u>
You and your partner have been given $2,000 and will pick a place where you want to go on summer vacation. Then you will share three things you want to do on your vacation.

<u>Part Two</u>
The Internet will be used to find out how much it costs for each of the three things, and other things for your vacation. You can't go over $2,000.

<u>Part Three</u>
You and your partner will create a poster collage with pictures of the place you chose. You must create a bar graph and pie chart to share with the class. The bar graph should show how much each item costs. The pie chart should compare the percent (%) of money spent on each item, adding up to a total of 100%.

<u>Part Four</u>
You and your partner will give a presentation to the class talking about your vacation using the math concepts.

1. Pick a place where you want to go on summer vacation from the list below. Circle one.

    New York City
    Washington D.C.
    Orange County California (Disneyland)
    Hawaii
    Alaska
    International (outside US) _____
    Other _____

2. Why did you pick this place? Write down three fun things you want to do while you are there?

    1. _____
    2. _____
    3. _____

Vacation Planning on the Internet

Student Name: _____

Class Period: _____

1. Go to www.kayak.com

2. If you are flying, you will look up flights. Use San Francisco as your home airport. Pick the dates of June 9 – 15. Be sure to multiply the cost by 2, so you can buy two tickets for two people.

3. If you are driving, you will look up cars. Pick the dates of June 9 – 15.

4. You will now find the costs for a hotel. Be sure to multiply by 7 if you are staying for 7 nights, or multiply by 6 for 6 nights, 5 for 5 nights.

5. Use www.google.com to find websites that help you find how much your fun things are. For example, Great America's website is www.cagreatamerica.com and you will find ticket prices there.

Category	Cost
Airfare	
Car	
Hotel	
Fun Thing #1	
Fun Thing #2	
Fun Thing #3	
Other (Food, Souvenirs)	
Total Cost	

Appendix J – Vacation Planning Student Work Samples
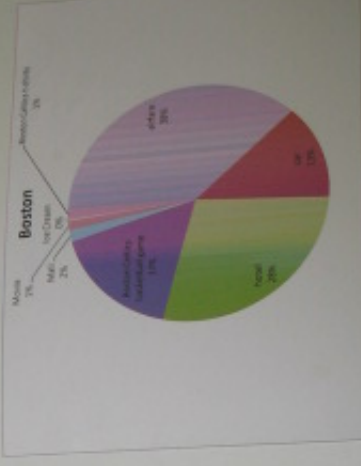
CALifornia

Six Flags
GREAT AMERICA

SANTA CRUZ BEACH

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