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Vicki Sorensen
Lincoln, Nebraska

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Motivating Middle School Mathematics Students

Vicki Sorensen
Lincoln, Nebraska

A report on an action research project submitted in partial fulfillment of the requirements
for participation in the Math in the Middle Institute
University of Nebraska-Lincoln

July 2006

Motivating Middle School Mathematics Students

Abstract

In this action research study I examined the relationship between the teacher, the students and the types of motivation used in mathematics. I specifically studied the mathematic teachers at my school and my seventh grade mathematics students. Motivating middle school students is difficult and the types of motivation can be as numerous as the number of students studied. I discovered that the teachers used multiple motivating tactics from praise, to extra time spent with a student, to extra fun activities for the class. I also discovered that in many instances, the students' perception of mathematics was predetermined or predetermined by parental perceptions of mathematics. The social environment of the student and a sense of belonging also plays a role in how motivated a student stays. As a result of this research, I plan to notify the mathematics teachers at my school of the most effective types of motivation so we can become a more effective mathematics department.

By Vicki Sorensen

Math in the Middle Institute Partnership
Heaton/Action Research Project
June 2006

It's wise to remember that all students are motivated. Some students aren't motivated to do what we want, so motivating middle school students can be fun, challenging and frustrating. To motivate students effectively teachers need to stay positive and creative in their methods of teaching. Middle school is a time when our students are given more responsibility and choices. These students are also in a continual growing and maturing stage of their lives. They are beginning to practice more decision-making skills. This is a time when outside distractions can become the nemesis for the mathematics teacher. Outside activities such as intramurals, plays, clubs, and anything social helps create a well-rounded individual, but makes it a challenge for our students when making good study decisions. Academically motivating our students and keeping them motivated can be one of the greatest challenges the classroom teacher ever has in their career. It has been said that 'teachers are over worked and under paid," so if this research can provide a list of motivation techniques for the classroom teacher, this could save classroom teachers' time and frustration.

Problem Statement

If I could motivate my math students better, they could become better in math and maybe better lifelong learners. Most of the students at my school have many societal strikes against them before I ever get them as math students. By seventh grade they have had years of poor attendance, little outside or parental support, personal family issues, and many more issues that stem from poverty. The students do not see the point of school when they are worried about whether they will eat that day or even if their 'parents' will be there for them when they need them. My students live with aunts, uncle, brothers, sisters, grandparents and if they are lucky their own biological parents. If I can support them during the year I have them as math students maybe with extra motivation they could realize education is important.

How can I motivate my students and help them understand that mathematics can lead to better things? This world revolves around math-related jobs. Computers, construction, accounting, mechanics, welding, and art are all examples of jobs that need math. These jobs could provide my students with a better living, and eventually lead them out of a world of poverty. What can I, as the teacher, do to motivate these students? How can I improve? How can I motivate students to become more interested in learning math?

I feel that if I value my students and their education, eventually some of them will see that math could lead to a better life. All of NCTM's 'overarching principles' could apply to my problem statement. All of my students, no matter what skill level they are, deserve strong support and a teacher who has high expectations of them. I need to help my students see where mathematics fits into their lives and everyday jobs. In other words, make math relevant. If my students can understand the relevancy and connections to their current knowledge then we can build on this to provide a foundation for their future, whether the future is further learning of math or a 'lead in' to some kind of job. I continue to make references to 'jobs' because many of my students do not have a working adult in their lives. I try to explain to my students that a job is not a bad word but can be synonymous with fun/excitement/interesting, and could be personally rewarding.

As adults we are always being evaluated. Students need to become comfortable with being evaluated or compared to others because this will happen in the job world. They will be evaluated in such simple things like renewing a driver's licenses. So our students need to be prepared to be assessed whether it is in math, on the basketball court, or even with the number of friends one might have. Assessment is something we all have to learn to deal with. Assessment can be motivation for learning. This is one of NCTM's overarching principles.

At this point, technology is something my students feel comfortable with, maybe not totally knowledgeable, but willing to work at and not be afraid of. Technology can be a motivation to learning mathematics. Currently Lincoln Public Schools has many self monitoring, math skill enhancing sites. This is making math fun, less teacher oriented, non-threatening and fun. With the continuation of use of technology/computers this could be a motivation technique in itself.

Aside from the NCTM's standards another important reason this is worth knowing is that the continuous student demands on the teacher can be emotionally demanding. The huge number of students who need our support is growing, and the number of teachers with the right kind of motivational skills is dwindling. It is very important to know and have the ability to motivate these students not just for them, but for everyone in our society. If possible, we 'seasoned' teachers need to support the beginning teachers with knowledge of how to motivate our students.

My first period classroom is made up of many wonderful challenging students. Student A enters with one sock and continues to lay his head on his desk and wants to sleep (he went to two parties over the weekend). Student B, an Arabic student, has been taught that women should be subservient to men; this makes him continuously argumentative with me as a female teacher. Student C has had 12 surgeries to date because he was in an explosion in Bosnia and his legs were damaged. He just exchanged a wheelchair for crutches, so health issues are cause for absenteeism. Student D has been home schooled and is lacking in many basic math skills. Student B and J are level 1 English Language Learner (ELL) students and speak a little English, can't read English and have never been in a school until last year. These are examples of some of the challenges a teacher must deal with and help the students overcome. Dealing with the listed issues can be emotionally draining and very hard.

I would not want a perfect classroom because that is not what life is about, but it would be nice if the students came rested, with their book, paper and pencil and ready to learn. In January I started a spreadsheet with the idea I would take points away from the student's daily grade but it quickly became apparent that the students wouldn't have many points left at the end of the month. It would be nice if each student spent some time after school practicing and learning math (homework). It would be nice if the students' parents valued education and got the students to school. In our modern world, new and different things are being discovered every moment; not everything can be learned or taught in our classrooms.

If I could motivate each and every student, they would be excited to discover mathematics in real life. They would also be willing to work and try the problems they were asked to do. Learning can come from trying and failing, but they need to learn the benefits of continually trying. In an ideal classroom the students would be motivated to work and eventually see some connections to real life and why math is important.

I am unable to control what skills the students come to my classroom with at the beginning of the school year. I cannot control what happens outside of my classroom. As I improve as a teacher and at motivating students, will some of them see the value in learning mathematics? Is this an uphill battle or a lost cause? Our families need to understand that education is important and this could provide a better life for their children.

Literature Review

Educators agree that motivating middle school students is a hard task. Current research looks at a wide range of variables trying to understand the best practices needed to motivate these students. Society has changed in the last twenty years, and our schools and educators need to change to meet the current needs of our middle school students. A few of these societal changes include the family make up, working parents, responsibilities of middle school students, the quantity and complexity of objectives being taught, and the ethnicity of the classrooms.

An analysis of research articles shows that the relationship of family and school influences the academic achievement of middle school students (Marchant, Paulsen, & Rothlisberg, 2001). Marchant, Paulsen, and Rothlisberg (2001) believe that these family relationships, parental involvement, and parenting styles mold students' educational development dramatically. This research states that this affects the students' motivation to achieve.

Murdock and Miller (2003) refer to family as a major influence in how middle school students deal with learning, peers and motivation. The student then takes these values with them to school. This becomes a "predictor of their commitment to school" (Murdock & Miller, 2003, p. 388).

Caldwell (2004) takes the research one step further looking into the students' home life. She believes that an absent parent can play a major role in a student's success or failure in school and out of school. She asks very pertinent questions regarding the students' living circumstances, i.e. living in an apartment vs. a house, living with other families, sharing a room with someone else; she even questions the history of the child's birth.

Murdock and Miller (2003) feel that families play the most important role in students' lives as they transition from elementary school to middle school. This is when peers begin to play a larger role in influencing these adolescents. Murdock and Miller also think that regular interaction with peers and peer groups can become the deciding factor in academic achievement and motivation. If students are involved socially with peers, Ryan believes that students' enjoyment of school and academic achievement will be greater. Ryan (2001) also studied classroom grades to see if achievement, motivation and interest in school were related.

Ryan's (2001) research showed a major exception to greater peer involvement equaling greater academic achievement. This exception was that peer groups can also have a negative effect on adolescents. This negative effect was the risk taking behaviors by middle level students (e.g., drinking, smoking, drug use, and sexual behaviors).

As students transition from elementary school to middle school, Ryan (2001) feels that "adolescence marks the beginning of a downward trend in motivation and achievement in academics" (p.1141). Eccles, Wigfield, Midgley, Reuman, Mac Iver, and Feldlaufer (1993) suggest that if the "appropriate educational environments" were in place for our middle school students this downward trend could be changed. Eccles et al went so far as to call middle schools "cesspools of American education," and the "wasteland of education" (pp. 553-554) because the school environments were not changing with the times.

Viadero (2005) and Anderman (2003) examined the importance of teacher-student relationships, school belonging and motivation. They believe that if a student has a good sense of well-being and belonging in school, that the student's motivation will be greater. These feelings might even counteract the downward trend of motivation during the transition period from elementary school to middle school. Viadero and Anderman also feel that self-esteem or lack of self-esteem can be seen in the students' academic achievements.

According to these research articles, the second most important factor is peer groups, self-esteem and a sense of belonging (Blyth & Berkes, 2000; Marchant, Paulsen, & Rothlisberg 2001; Murdock & Miller, 2003; Ryan, 2001). So if a student perceives acceptance among friends, he or she has a better potential for success academically (Anderman, 2003).

Several researchers suggest gender, ethnic group and puberty play a role in a student's motivation for academic success (Akos & Galassi, 2004). These researchers go on to say that girls suffer greater losses in self-esteem during the transition from elementary school to middle school. This would account for more peer upheaval, less motivation and depression during middle school in girls (Akos & Galassi, 2004; Powers & Michael, 1984).

Research suggests that there are many influential variables deciding a middle school student's motivation. Family, peer groups, a sense of belonging and teacher-student relationships were factors that researchers felt were the most important. One researcher

suggests that something as simple as uniforms can cultivate greater self-esteem and then greater motivation (Viadero, 2005). But the majority of research suggests otherwise.

Middle school students are in a time of their lives where their bodies are changing because of puberty (Akos & Galassi, 2004). Their peer groups are also changing often. So because these students are constantly socially and developmentally changing, it might be enough to just say that there will be many variables determining a student's motivation. Educators need to be prepared with all of this vast information to better motivate each and every individual in our classrooms.

Purpose Statement

The purpose of this study was to find the best ways to motivate middle school students. The data collection took place Spring semester 2006 in the researcher's seventh grade mathematics classroom. Data was collected from a survey of middle school math teachers, studying videos of my seventh grade classroom, and from the twice-weekly journaling. This study attempted to answer these questions:

- What is the relationship between student motivation and the classroom teacher?
- How do middle school math teachers motivate students?

Method

It is important that we teachers use the most successful types of motivation to keep our students performing at their highest academically. My research was done with the intent of finding the most successful methods of motivating students in mathematics and then spreading the word to fellow teachers. As a teacher with 30 years of experience in middle schools I find that I am still refining my lessons, and I am continually looking for the best motivation practices.

I used three forms of data collection. I gave a survey to the math teachers at Daisy Middle School (see Appendix A for survey). I videotaped my math class three times over ten weeks with the intent of watching for all forms of positive interaction and motivation. My third form of data collection was to journal two to three times per week for several months. In my journaling I used three questions to guide my journal writing. Did I speak to every one

of my students in some way during that day? This might be calling on them in class, visiting with them during lunch, or just a greeting as they entered the classroom. The second question I kept in mind was how did I motivate the students during the lesson? The last question I thought about was there anything the students did today to show me they were motivated during math class?

Data Analysis

My research began with teacher surveys given to all math teachers at Daisy Middle School. This math department is made up of teachers with a wide range of backgrounds. Thirteen math teachers were surveyed. This group consists of seven women and six men, eight sixth grade teachers, two seventh grade teachers, two eighth grade teachers and one special education teacher. The experience levels range from one to thirty years of experience. The survey asked a wide range of questions. The questions asked were about the classroom, motivation techniques, teaching styles, grading practices, family backgrounds and student peer groups. These questions were meant to be thought-provoking for the teachers and were intended to give me an insight to the teacher's philosophies. If we are to better our department and motivate the students, we need to work as a cohesive unit.

The survey questions centered on things teachers can control: the classroom, the materials taught, the methods of teaching, grading practices and the seating assignments. The next set of questions was designed around the teacher's perception of the students and their skills. The third set of questions asked were about the uncontrollable things: student attendance, parental support, peer groups, innate math skills.

According to the survey responses, the classroom should set an inviting stage for all lessons. Questions 1, 9 and 10 referred to the classroom and the classroom being an inviting place. I used the teachers' responses to find the averages to the questions in the survey. The responses to these questions have an average response of 3.25 to 4.75, with a 5 being a response that everyone felt was important. The sixth grade teachers felt more strongly about the appearance of the room. The eighth grade teachers felt the classroom appearance was the least important motivator. These sixth grade teachers teach many subjects and they use the walls and bulletin boards for display of information that they hope the students will use for reference. The female teachers felt more strongly than the male teachers about the

appearance and learning environment of the classroom. Several teachers mentioned the fact that the room needs to be 'interesting.' On a scale of 1-5, 5 being the most important, the average was 4.77. Most of these teachers felt that the classroom should be an inviting, interesting and welcoming place for all students. Most felt that if the classroom was inviting the students would be motivated to come to class.

I believe that the students who sit in the front are the more motivated because they are closer to the lesson being taught. With fewer distractions, the students can feel more a part of the lesson. My colleagues do not feel the same. Questions 9 asked about the important of seating in the classroom. The average response was 3.2, which is average importance. The least experienced teachers felt that any seat in the room would provide good learning. The more experienced teachers felt that the best learning happens in the front. Are these opinions formed from experience? Do these more experienced teachers feel the students in the front have a better rate of success? All seats should be a great place for learning. Maybe this is where teaching styles make a difference. If a teacher lectures from the front and does all their teaching from the front, this would be the best place for learning. But if a teacher changes their style from lesson to lesson this makes math more interesting and every seat becomes the best for learning.

All of the surveyed teachers felt that motivating middle school students is a challenge. The survey questions that pertained to motivation were 1, 6, 9, 10 and 12. The more experienced teachers felt they had a good repertoire of techniques to draw from when teaching mathematics and trying to motivate the students. Many of the teachers suggested a change of teaching style often so as to not make the lessons mundane. Some easy changes when teaching could include using the overhead, then the board, then have the students explain their work, check papers in groups instead of the teacher doing the grading. Do something different often. Middle school students are constantly changing physically and trying new and different things so maybe by changing teaching techniques often this will motivate the students and keep the lesson interesting. One of the surveyed teachers said, "Engaging curriculum has to be taught in an inviting environment, actively involving students." "Students need to delight in what they discover!" another teacher said. One sixth grade teacher felt strongly about, "connecting all lessons to real life," thus motivating the students to be a lifelong learner and keeping mathematics interesting.

Asking questions about grading practices brought dramatic differences in opinions among these teachers. The sixth grade teachers tended to think that everyone should feel 'good' about math and the grading practices should be more lenient. The eighth grade teachers believe that their job was to prepare their students for high school so they tended to grade in ways similar to the high school grading practices. Our district has required the math teachers to offer 'retakes' on all tests. This practice seems to make the teachers feel they can be stricter when grading because the students get a 'second chance.' One teacher said, "they have to experience success," another comment was, "they have to believe they can do it!" All these teachers felt that by giving retakes on tests this allows the students to feel better about themselves, mathematics and builds motivation.

Every teacher mentioned that the students start middle school with the skills they have mastered in elementary school. The survey asked about preconceived views of mathematics in question 2. The average response was 4. If math was not a priority in elementary school the job of the middle school math teacher becomes harder and more stressful for the teacher and the student. Social promotion was mentioned several times in the comment section of the survey and how it negatively affects the students and their long-term success.

Although each student comes to school with the educational values taught at home, the teachers felt that these educational values could be built upon if the teacher kept high expectations. Environment, whether at school or home, plays a huge role in a student's motivation to succeed. If a family values education, a student tends to value school and learning. The family can play a huge supportive role for what the teacher does in the classroom. All teachers felt that to become better in mathematics a student has to practice in and out of school. So when the family supports the learning outside of school the student's success and learning grows tremendously. The Daisy math teachers felt that the best thing a parent could do for their child is to support the teacher and the student while the student builds the skills necessary to be a lifelong learner.

Daisy Middle School is a relatively small school with approximately 550 students in grades 6 through 8**.** When there are a small number of students per grade this limits the number of classes the school can offer. Peer groups can be a guiding factor when motivating students. These peer groups can be a positive or a negative influence on the students. So

when a school is small, separating students when there is a problem among the different peer groups can be difficult. Middle school students are changing physically; they are also changing and developing their confidence in themselves and their skills. Peer groups can set a tone for the classroom and can promote motivation among students, or the opposite and prevent learning.

The survey results were very insightful. The questions that were asked reflected the teacher's classroom philosophies. I had the teachers look at the results and discuss why certain teachers felt more strongly about a question than others. One of the questions that we discussed was the fact that the majority of our families do not support their children in their education. These teachers felt that this was one thing we could not control but affected the students greatly. The discussion of the survey results also made us realize how important a creative and interesting lesson can be in motivating the students. All of these teachers believe that a motivated student will become a lifelong learner.

The second form of data collection was journaling. During the spring semester I made an effort to journal several times a week. This gave me an opportunity to reflect on the daily action in my classroom. It also gave me a better look at how my personal attitude and quality of teaching affected the students and their performance in class. I was very interested in the number of positive reflections and positive types of motivation I used on a regular basis.

On February 1, I started a unit on rates and proportions. This unit is very hard for twelve year olds. As a teacher, this unit takes more planning and thought because the material is not relevant to the students and most of my students do not have any background knowledge to build from. As I started the unit the students were attentive; they even tried the homework problems. The students just followed the steps in the problem solving examples but did not understand the steps. As the days passed the classroom behavior deteriorated. The students were writing notes to their peers, failing to do their homework, or asking to leave for the restroom or nurse. On February 6, my journal entries reflected my frustration with the lack of motivation of my students to even try the problems. I wrote "why am I even trying to teach this?" I wrote that I had offered

to stay after school and help any students who might want extra help, but to that date not one student responded.

This unit is several weeks long and the classroom behaviors continued to deteriorate. After a week, one of the least motivated students even said, “I want to go to the I.S.S. room.” Up to this point most of my students were trying because they knew I was trying hard to get them to understand the material. But when the students ask to go to the ‘In School Suspension’ classroom instead of being in class, my personal motivation dwindles.

Is this unit hard for my students or is this material harder for me to teach? As I read my journal entries my frustration is quite evident. Was my attitude the cause of the students’ misbehavior or was the students’ misbehavior the cause of my negativity? Some of my comments were: “My drawings should have helped them understand similar triangles, what is wrong?” Another comment was “maybe I need to have different activities so they can see the comparisons of measurements.” At one point I even wrote, “I need to be absent like J.” Once again, are we teachers asking the students to learn material that is beyond their maturity level?

On February 15, I gave an assignment which I call practical usage of the material. As a class, we went out to measure the height of the school flag pole. The sun was up and the shadows were perfect for making comparison ratios. The students got down and measured the shadows and used the height of our chosen student. At this point several students volunteered to climb the flag pole and measure instead of working the problem. My journal entries were much different after this lesson. One was “Yea, they are finally involved!” This shows that the students were being pulled back into the math by using real-life situations. The math has now become something useful.

Is the ‘plug and chug’ time at the beginning of a unit necessary to get the students to a point that they can do the real-life situations? I believe that it is. As hard as it might be on the teacher and students, the steps and procedures need to be taught first. I believe that because I had a rapport with the students up to that point, many of the students continued to work hoping and knowing that there was a reason to learn this math. This is student/teacher trust that is built over time. Could I have designed a lesson discovering

the similarities and ratios first? Would this have eliminated the stage of frustration or lack of motivation at the beginning of the unit? Do I have time in the tight teaching schedule to allow the students to discover and use practical math to help with understanding? I believe by using practical application of the math, more students will retain and have mastered the objective.

At the end of March, I started a unit in geometry. I tried to put an activity at the beginning of the unit this time. At the start of this unit the students got to play with blocks and different wooden shapes so as to understand the different polygons. The students were excited and really got into the activities. The students were much better behaved than during the last unit. The students understood the different concepts from the beginning. Was this because they got to touch and feel the shapes? Or was this because they were previously knowledgeable on the subject? Or was this fun because I really like geometry and my excitement of the topic was felt?

My journal entries make it easy to understand that students' motivation; this objective was much different than the unit on ratios. I wrote on March 15 "Wow, the participation in class was great today!" "Even B. raised his hand and didn't ask to go to the nurse." When the students are excited to learn this makes my job fun and worthwhile. Math is a subject that has every objective linked in some way to the next. It is hard to get the students to understand this. For instance, fractions need to be understood in order to understand and work proportions. They need fractions to find the similarities between the edges in similar shapes. If I can continue to connect each lesson to the next in some way, will the motivation continue through the harder concepts like ratios? My belief is that the more I can connect each lesson to the next, and connect the lesson to real-life applications, I will make the math worthwhile to most of the students.

My third method of data collection was videotaping my first period math class. I videotaped three different lessons. I was very interested in seeing my teaching and how I encouraged my students to learn during the class. Each day I have a personal agenda that I try to achieve within each lesson. I try to speak to each student sometime during the class period. This might be a simple greeting or asking them to solve a problem and explain it to the class. I hope by doing this I have made the students feel welcome and

show that I am genuinely interested in them. I want them to feel a part of math class and give them reassurance that they are important. I try to have a warm-up problem and a standard closure to each lesson each day. The core of each lesson might be different from day to day. The lesson might be an activity; the next day might be a lecture; and the next might be the students explaining their work. I do this to keep the math interesting and creative.

The class I chose to videotape is quite unique for many schools, but is the norm for Daisy Middle School. This class has 23 students. Five of the 23 students have very limited English skills. Two students spoke moderate English but could not read English. Two students take reading class. One student had been absent an average of two days a week for the past semester.

As I watched my videotaped lessons my class routine seemed to give the students some stability. They knew what to expect and were prepared when class started. The students came in, got busy on the warm-up and had their homework out ready to go. I start with a warm-up every day and the students know they are to get paper out and start to work. As I watched the video several students were still shuffling through their notebooks looking for their work instead of doing the warm-up. This happened during all three videos. Out of the five students not organized three of the students were not ready on all three videos. These are the same students who are not listening and do not understand what is being asked of them during the lesson. Being prepared and organized seemed to set the student up for success or failure in class that day.

While I watched the videotapes of my class I tallied the times I made a comment to a student that was positive or motivating. I also tallied the time when the students made some positive comment regarding class, the lesson, math or anything school related. But the most important information I kept track of was the number of times a student was not prepared, didn't have their materials, or was not paying attention. When comparing the three videotaped lessons, 90% of the time it was not the same students ill prepared. So their disorganization was not continuous. This seemed logical because we all have days that we are not as prepared. The 10% of the students who were continuously disorganized seemed to be the students with lower grades. I went back to

the last grade report and those students did have the lowest grades in class for that quarter. This would make me think that coming to class organized and prepared plays a huge role in whether a student will be successful in math class. Daisy Middle School has a program after school to help these students become better prepared for the next day of school. As I looked at my group of students there are many who take advantage of this after-school program.

The three students, who were continuously disorganized, never had a pencil, notebook paper was always an issue and they brought their math book two of the videotaped days. As I watched the video, this shuffling through their papers lasted approximately the first ten minutes of class. Meanwhile I had already moved on to the lesson and the new material. As I watched the three videos for the first time I continued to concentrate on these three students and I tried to think of ways to better support them. All three students come from a single parent family, and they all took advantage of the free and reduced breakfast and lunch program. The parents of these three students did not come to parent-teacher conferences. Does this mean these students get little educational support at home? Do these students have so many other responsibilities and worries so that school is an afterthought?

After concentrating on these three students I made an effort to personally ask them to come in for help after school. One student came in twice during the semester; we worked on cleaning their notebook, and organizing it. I added pencils and paper to his/her trapper and filed his/her current work with dividers. This seemed to help this student for several weeks. Work and interest in class was shown with an improvement in class work. Although I continued to make personal connections with this student in class, the improvement did not last and he/she didn't come visit after school after the first few times. The student's grades at the end of the quarter showed a small amount of improvement. This was very frustrating to me.

While watching the taped lessons I also concentrated on my questioning techniques. I watched for open-ended questions, direct questions and the tone of my voice. I was very pleased with the students and how the open dialog progressed through the class periods. As a teacher I do not require raising of hands as long as we can discuss

the lesson and give everyone an opportunity to participate. As the teacher I can choose questions that are appropriate for the different students. I can ask a non-English speaking student to visually work a problem on the board. This provides an opportunity for all students to participate.

In all of the taped lessons, if the students did not offer responses to my questions, I backed up and re-explained the steps to the problems. I was assuming, by the lack of responses, that they did not understand. If a few of the students responded, I had those students explain in their words how they understood the procedures. While watching one lesson a student gave an incorrect response which started a discussion about the 'whys' of the procedure. It was rewarding to see the students able to discuss the work without being conscious and being open to comments. This is something that does not happen at the beginning of the school year. The students' confidence to discuss their work builds as the year progresses.

One of the videotaped lessons covered material that was well prepared but the objective was difficult for seventh graders. I started the lesson with a warm-up and the students were ready. I presented the new material; it was obvious that the students were trying to understand at the beginning of the lesson, but they were just were not comprehending what I needed them to understand. As I continued through the material, I attempted different examples to better explain the objective. Several more students started to understand the objective and became motivated to try harder. As my class time was dwindling and more students were not grasping the work, my frustration level rose. The behavior of the students was also becoming strained. Was the behavior a cause of my frustration or was my frustration the cause of the behavior? Was the behavior and my frustration caused by material that is not age appropriate?

Although I did not videotape the next day's lesson I did journal. I started the next lesson with lots of praise for the students and told them that, "not all material will be easy at the beginning." By building their self-esteem at the start of class, the students were motivated to continue the learning process with new vigor. A teaching hurdle was accomplished.

As teachers, we also have many factors that are frustrating and uncontrollable. A student's attendance plays a large role in the continuous learning of a math student. This also causes low motivation and frustration in math students. While watching the students on the videotapes it is evident in the facial expressions whether a student is engaged in the lesson or not. The student might be looking around, digging in their papers, staring off into space or just looking down hoping I won't call on them. Or a student might be following my movements, watching what is happening on the board, or asking questions. This, in turn, equates with their daily success of the lesson. If a student is absent, they now have a pocket of missing information that the student has to work twice as hard to fill.

Poverty and being without enough English skills can be another hurdle for the students, and that can frustrate the teacher. While we as teachers try to help all students, the background that students arrive in class with can hinder their success. Until the federal government and the school districts realize that not all schools are equal, the problems of poverty and lack of English skills will continue to plague the success of these students.

Videotaping my classroom was a personal affirmation of my beliefs as a teacher. Coming to class well prepared with material that is age appropriate and connected to real-life situations is necessary to a great lesson plan. Teachers need to be knowledgeable and experienced in their subject matter enough to foresee student's problems with an objective. This all adds to the success of the students and a great lesson.

Conclusion

No matter who you are or where you come from, the children in America have been promised a free education. Teachers everywhere struggle to find the best methods to teach and motivate their students. Motivating students is not easy, while alienating and demotivating them is very easy. My survey reflects the fact that teachers do not use the same strategies to motivate their students from day to day, but try any method that will inspire academic achievement in their students. These methods can range from the traditional to the

unstructured. Through my data collection I've reaffirmed my beliefs about keeping the students actively involved, thus keeping the students from putting the brakes on their learning.

To motivate students effectively teachers need to be able to put a positive spin on errors and discovery. Not all learning is immediate and if I as the teacher can demonstrate trial and error, the students might be able to accept their mistakes and learn from them. Mistakes are an important part of learning. If my expectations are reasonable, hopefully the students will then be able to analyze their work and learn from their mistakes. This is a process that takes time and trust on the part of the teacher and student.

While reflecting on my unit on rates and proportions, I do not believe my goals for the unit were clear. When I teach this next year I plan to make a list of short-term goals for the unit. If the students work to achieve each of the smaller goals, then when we all look back, our accomplishment of the unit will hopefully be more rewarding and exciting.

The teachers I surveyed wholeheartedly believe that all students can be successful. Finding the catalyst to inspire some students can be a challenging and daunting task. These teachers try to be flexible in their lessons, integrate real-life situations into the math, use intriguing ideas to enliven the material, bring their enthusiasm to the classroom and still feel inadequate at times. These teachers try to motivate their students in every manner possible.

Our district has started to implement 'Lesson Study' groups. This process would be a great support when the teacher is floundering with the students' motivation and the material. An example would be if many teachers are teaching rates and proportions at the same time it would be nice to be supportive and learn from each other. Thus, the purpose of Lesson Study groups. Our lessons become better and more relevant to the students. This would motivate the students and motivate the teachers, and the teaching process. One of the best things about teaching is the wisdom we can acquire from others.

One of the most distressing issues for a teacher is the fact that we cannot control the outside issues that our students come to school with everyday. The nation's dropout rate is too high. Whose job is it to motivate our children to learn? Is the loss of the family structure causing the lack of motivation in our students? When a teacher builds a strong connection with the students, a sense of responsibility can be developed within them. This can then be a foundation for their own learning no matter what their background. The teacher's love of

teaching continues to inspire the students and continues to motivate them to achieve at the highest levels. It is my belief that what separates a good teacher from a great teacher is the skill to build the confidence in our students, to look past their fears and background, and build the skills that develop a student into a life-long learner.

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Survey Questionnaire																
		Survey Questions														
Grade	**Teacher**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
	1	4	4	5	3	3	4	5	4	3	2	4	2	2	2	5
8	**2**	5	5	5	3	3	4	5	5	3	5	5	5	5	5	5
	3	4	5	3	4	4	3	4	4	2	3	4	5	2	2	3
7	**4**	5	5	3	2	3	4	5	5	5	5	5	4	2	3	5
SPED	**5**	5	5	5	2	2	5	5	5	5	5	4	5	1	1	5
	6	5	2	5	3	3	5	3	3	4	3	4	2	3	3	5
	7	5	5	3	4	5	5	5	5	5	5	5	2	2	4	5
	8	4	4	4	3	3	3	3	3	3	2	3	4	1	1	4
6																
	9	5	3	4	4	4	5	4	4	1	2	5	4	3	5	4
	10	4	3	3	3	3	4	2	2	2	3	4	3	2	2	4
	11	5	4	5	3	3	2	4	5	3	4	5	5	4	3	5
6																
		51	45	45	34	36	44	45	45	36	39	48	41	27	31	50
Average		4.636	4.091	4.091	3.091	3.273	4	4.091	4.091	3.273	3.545	4.364	3.727	2.455	2.818	4.545

Figure 1

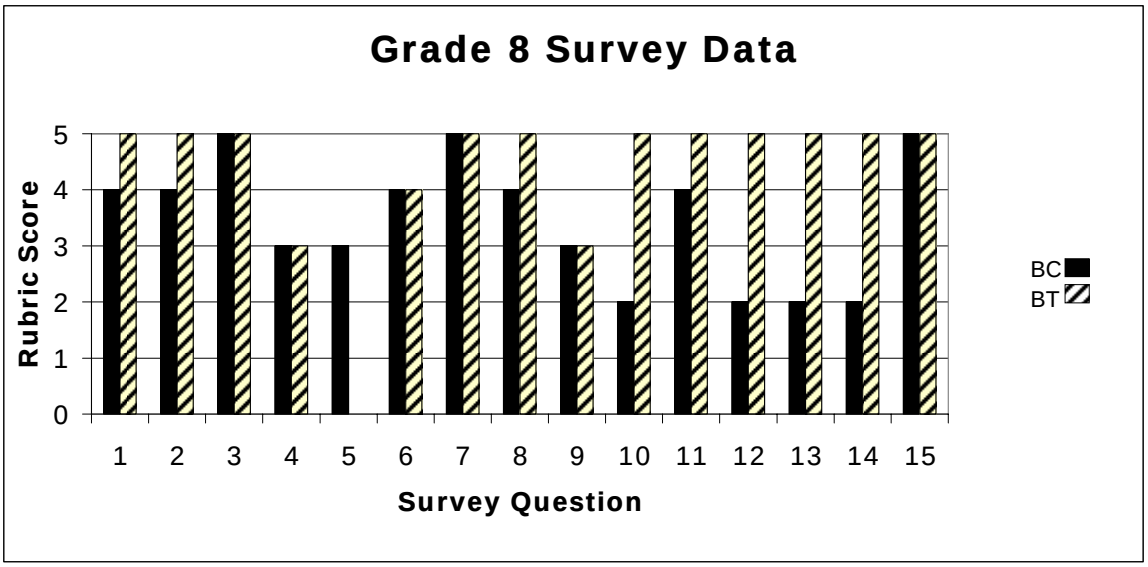

Grade 8 Survey Data
Rubric Score
0
1
2
3
4
5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Survey Question
BC
BT

Figure 2

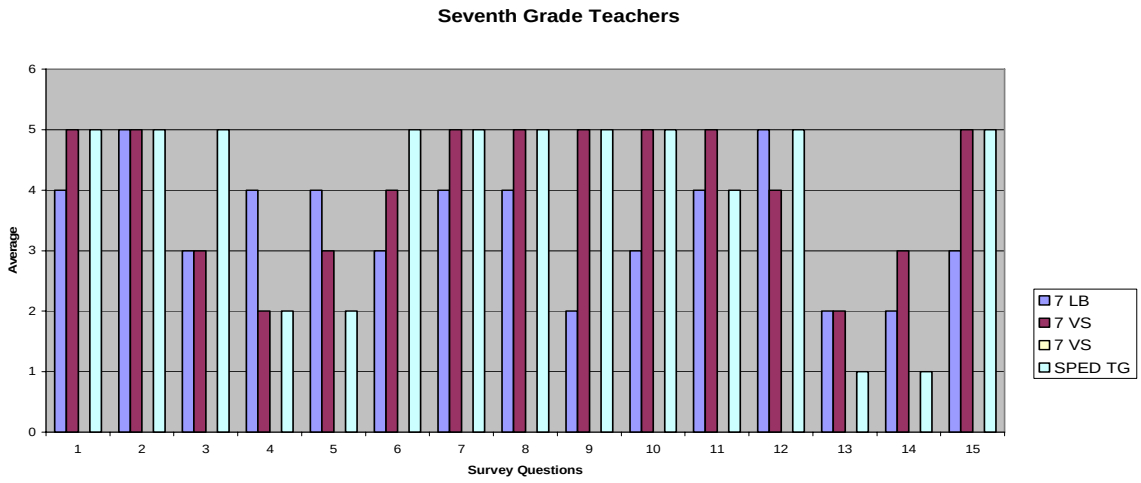


Figure 3

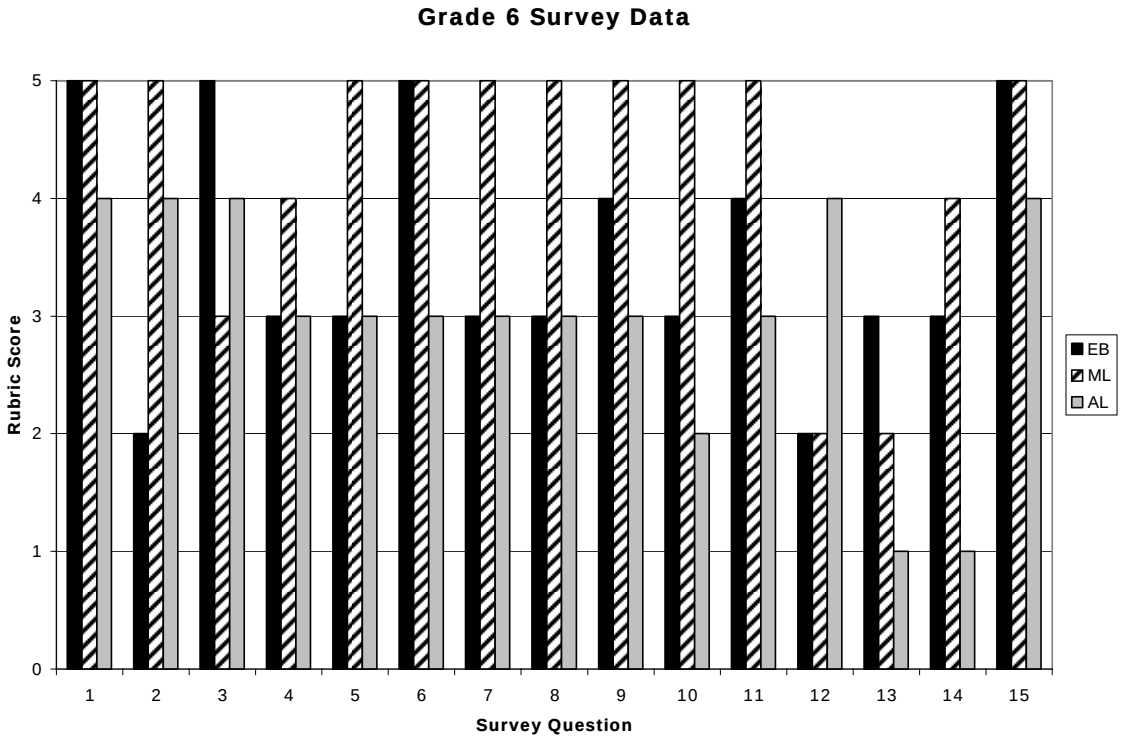


Figure 4

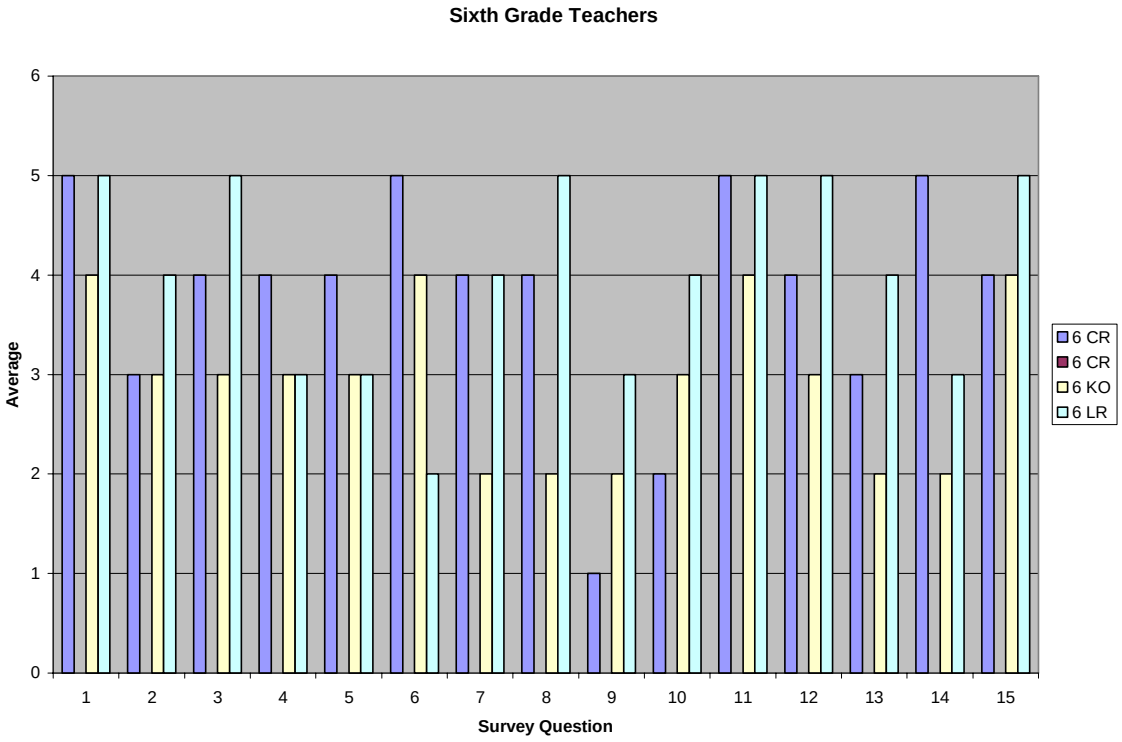


Figure 5

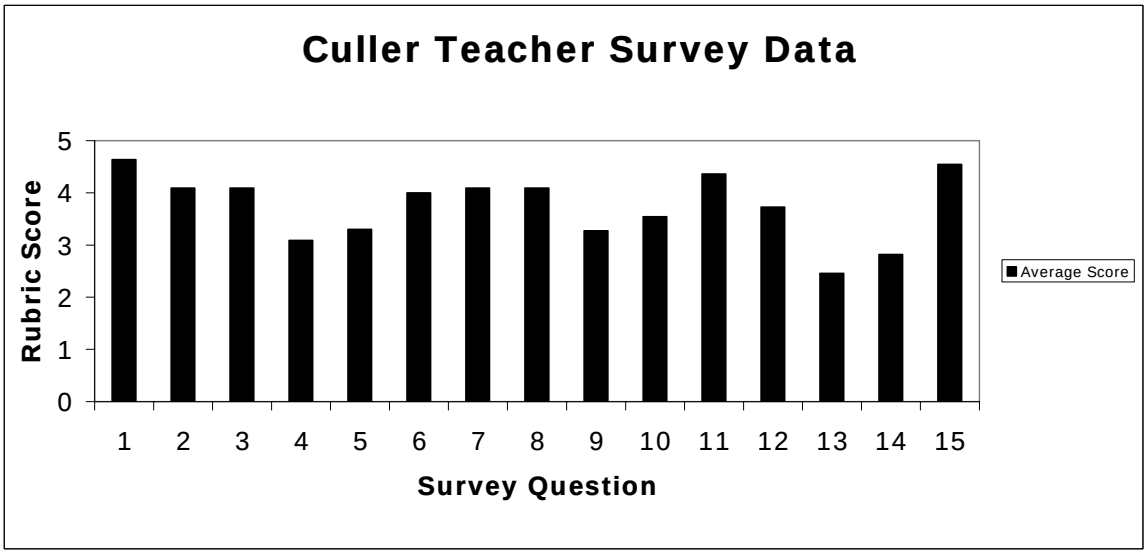
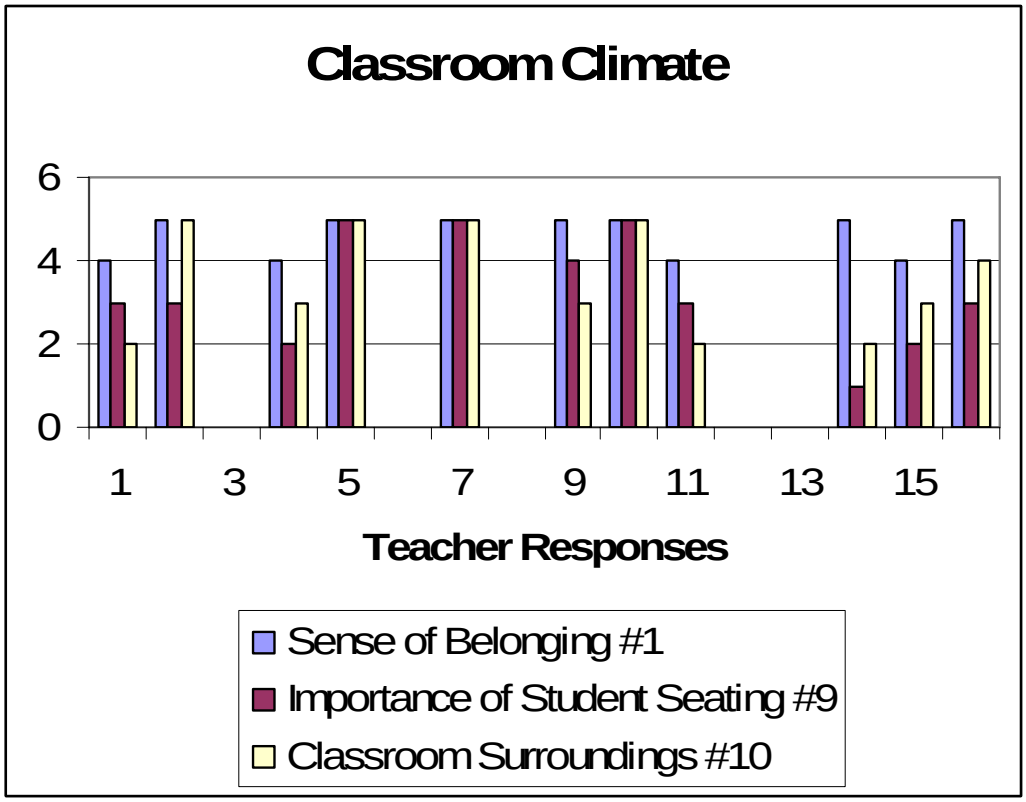
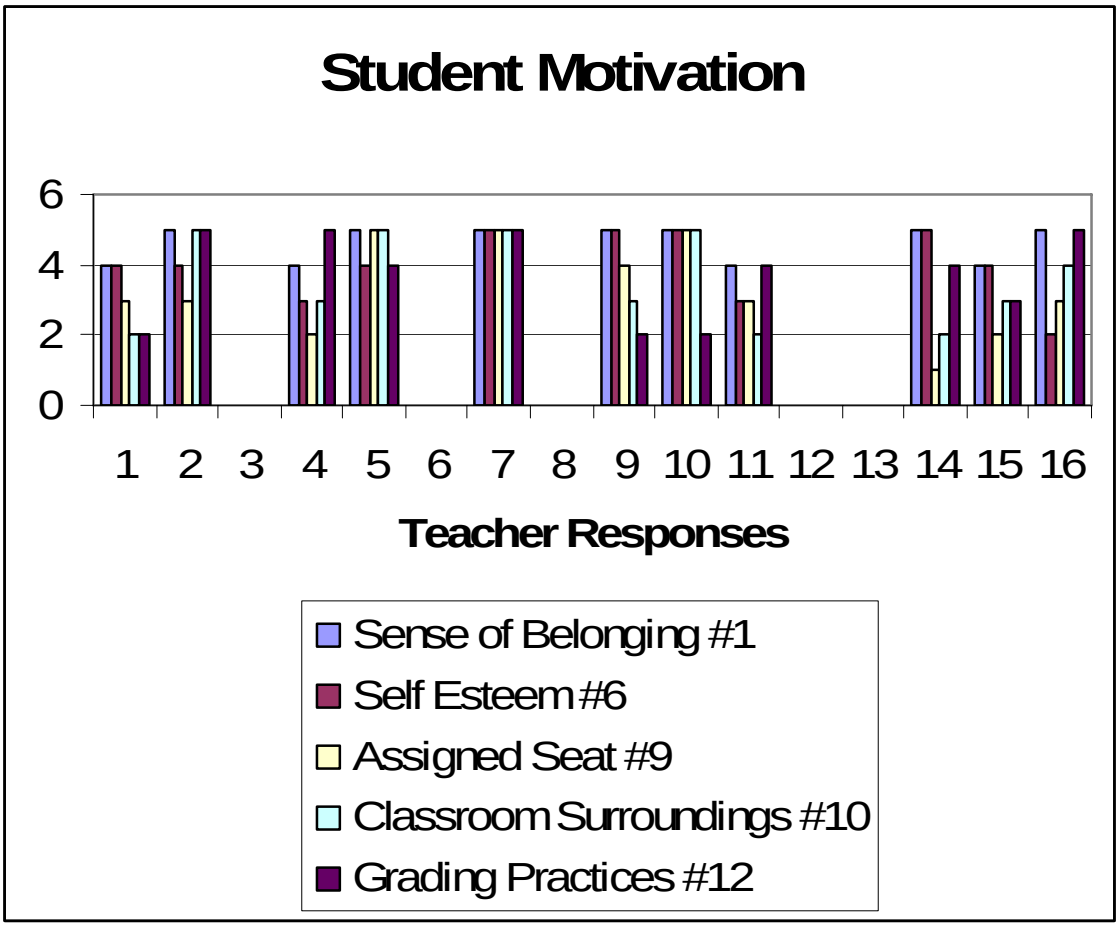
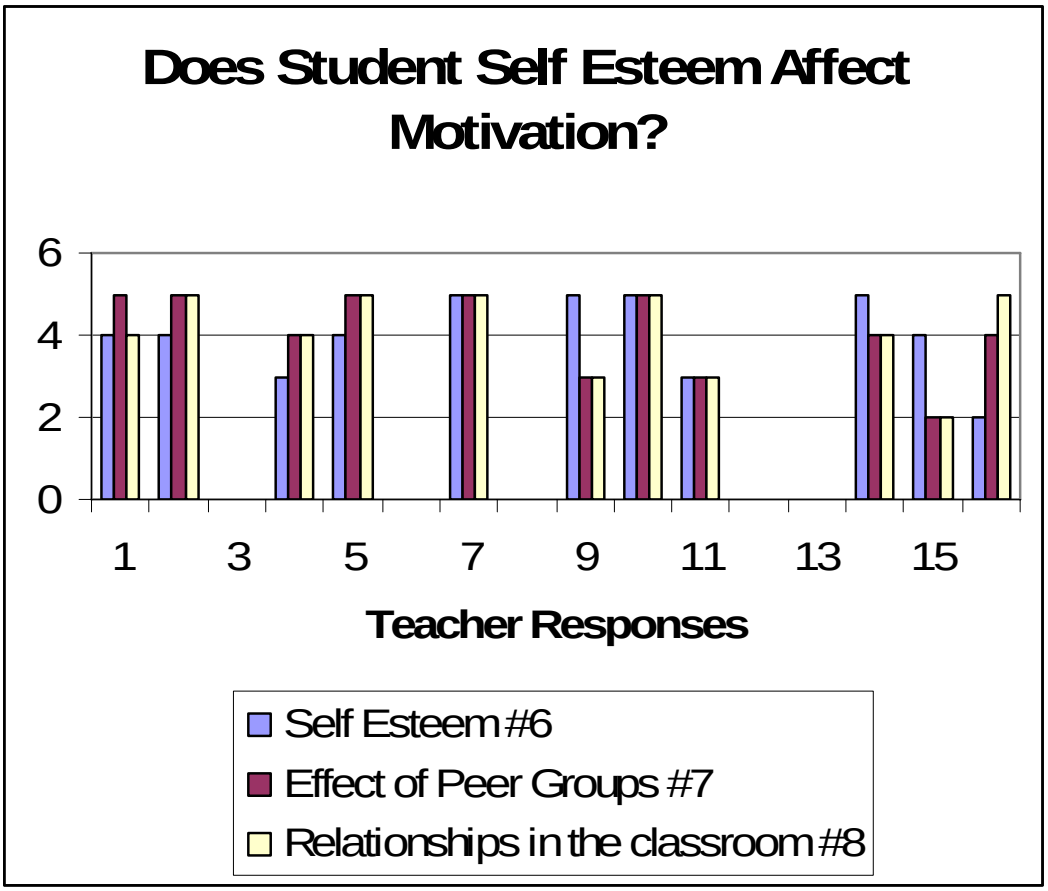


Figure 6


Classroom Climate
6
4
2
0
1
3
5
7
9
11
13
15
Teacher Responses
Sense of Belonging #1
Importance of Student Seating #9
Classroom Surroundings #10


Student Motivation
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Teacher Responses
Sense of Belonging #1
Self Esteem #6
Assigned Seat #9
Classroom Surroundings #10
Grading Practices #12


Does Student Self Esteem Affect Motivation?
6
4
2
0
1
3
5
7
9
11
13
15
Teacher Responses
Self Esteem #6
Effect of Peer Groups #7
Relationships in the classroom #8