JOHN W. GARDNER CENTER
for Youth and Their Communities

Practices that Promote Middle School Students' Motivation and Achievement

By Karen Strobel

As students transition from elementary school to middle school, their motivation to learn declines along with their engagement in learning (Meece, Anderman & Anderman 2006, for review). This decline is especially troubling for low-income, minority youth who are more likely to have struggled academically during their elementary school years (Brooks-Gunn, Duncan & Aber, 1997). The decline in motivation and engagement, however, is not inevitable. What happens in classrooms can make a difference by promoting a set of beliefs that help launch young adolescents on positive educational and developmental trajectories.

Over the past two years, the John W. Gardner Center for Youth and Their Communities (JGC) at Stanford University has worked in partnership with the Redwood City School District to gain a deeper understanding of classrooms that promote motivation, engagement and, ultimately, achievement among an ethnically and economically diverse population of middle school students. All middle school students in the school district completed surveys in 2009 and again in 2010 asking them about their motivational beliefs and their experiences in their classrooms. Our analyses highlight three main findings:

1. Students' motivational beliefs are significant predictors of their achievement.

2. Classroom practices that encourage effort and understanding and create a caring learning environment potentially yield higher achievement by increasing students' motivation to learn.

3. Changes in classroom practices are associated with changes in students' motivation

Background

Researchers have documented the critical link between students' beliefs about their abilities, their goals for learning and their engagement in school (Elliot & McGregor, 2001; Kaplan, Middleton, Urdan, & Midgley, 2002; Pintrich, 2000; Wolters, 2004). Researchers also have identified classroom practices that promote students' motivation and engagement (Kaplan et al., 2002; Patrick, Ryan, &Kaplan, 2007; Skinner, Furrer, Marchand, & Kinderman, 2008). Specifically, students are more likely to feel motivated and engage in learning in classrooms where teachers:

*   focus on understanding over getting the right answer
*   encourage effort and improvement over displays of competence
*   relate warmly to students and communicate commitment to their learning.

Despite these well-documented findings, school systems rarely dedicate resources to insuring that practices and policies create a caring and motivating school and classroom climate. In partnership with the Redwood City School District, we launched a research project to delve more deeply into the relationship between classroom practices, students' motivational beliefs and their achievement trajectories. We were especially interested in identifying ways in which specific classroom practices may benefit the low-income students in the district. Specifically, our work was guided by the following questions:

- How are students' motivational beliefs related to their academic achievement?
- How are classroom practices related to academic achievement?
- How are changes in classroom practices related to changes in motivation?

Redwood City's Middle School Students

The Redwood City School District (RCSD) serves approximately 2500 students in grades 6 through 8. In the spring of 2009, 2300 students completed surveys asking them about their experiences in their classrooms and their beliefs about themselves as learners. In the spring of 2010, 2360 students completed surveys in their classrooms. Among the population of middle school students in the district at the time our survey was administered, 65% were Latino, 25% were White and 10% were identified as another ethnicity. Fifty-three percent of the students who completed the survey were eligible for free or reduced lunch.

Eight schools participated in this project. These schools vary in size and grade span. In addition, the percentage of students who were English language learners or who received free lunch varied across schools. For example, at one school about 10% of the students received free lunch while at three of the schools more than 70% of the students received free lunch. See Table 1 for a summary of the schools' size, grade span and demographics.

Table 1. School Characteristics

School	Size	Grade Span	% Free Lunch	% Latino	% English Learners
1	342	6-8	73	82	42
2	529	3-8	13	25	.4
3	669	K-8	88	95	71
4	701	K-8	68	87	55
5	726	K-8	10	28	7
6	785	K-8	30	40	25
7	861	6-8	67	74	39
8	882	K-8	93	92	77

Measuring Motivation, Practices and Achievement

In our research we define motivation as students' beliefs about their ability to learn as well as their beliefs about the purpose or goals for learning. The positive motivational beliefs that we captured in our survey measure students':

- beliefs that they can successfully master their school work
- desire to understand new concepts and develop new skills.

To measure the extent to which students believe that they can successfully master their school work, we asked students to respond to five statements[1] such as "I can do even the hardest work in math class if I try," and rate how true that statement is for them (1= *not true for me* and 6= *true for me)*. Similarly, to measure students' desire to understand new concepts and develop new skills, we provided five statements such as "It's important to me that I thoroughly understand my work in math class," and asked students to rate how true each statement is for them.

Our survey also asked students questions about practices they experienced in their classrooms. In our analyses we focused on two key sets of classroom practices:

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[1] The items in our survey draw on "goal theory" and the work of Carol Midgley and her colleagues (2000) who designed and validated the items that we use.

- encouraging students to put forth effort and pursue deep understanding
- creating a caring learning environment in the classroom.

To measure students' perceptions of practices that encourage effort and deep understanding, we asked students to respond to six statements such as "In math class, it's OK to make mistakes as long as you are learning, " and rate how true each statement is for their math classroom. We captured students' perceptions of practices that create a caring classroom by asking them to respond to four statements including "In math class students are not allowed to make fun of someone who gives the wrong answer."

In this set of analyses we measured achievement using the California Standards Test (CST) for math and English. Students' survey responses were linked to their district records using the Youth Data Archive[2]. Our analyses included students' performance on these achievement tests from 2008-2010. With multiple years of achievement data, it was possible for us to separate what outcomes were explained by students' academic histories from outcomes that could be explained by experiences in the classroom.

How are Students' Motivational Beliefs Related to their Academic Achievement?

Among middle school students in RCSD, we found that positive motivational beliefs were associated with higher CST scores (See Table 2). In our analyses we separated achievement gains that were associated with students' performance on the CST from the year before from gains associated with students' motivational beliefs. This relationship between motivation and achievement held true for students with different demographic characteristics including gender, grade level and income.

Table 2. Positive Motivational Beliefs Associated with Higher Test Scores

	Students' Beliefs		CST scores
↑	Believe they can master school work	↑	Achievement
↑	Desire to learn new concepts and skills	↑	Achievement

How are Classroom Practices Related to Academic Achievement?

With evidence that students' motivational beliefs were indeed predictors of achievement, our next set of analyses focused on the classroom practices that cultivate such positive beliefs.   We found that classroom[3] practices have the potential to yield higher achievement if they succeed in increasing students' motivation to learn (See Figure 1). Across the school district, we found evidence of teachers who encouraged students to put forth effort and pursue deep understanding. Students who experienced these practices in their classroom were more likely to feel motivated and earned higher test scores. Similarly, students who experienced a caring learning environment in their classroom were more likely to feel motivated and, as a result, earned higher test scores. Survey findings demonstrated that this pathway held true for students after taking into account differences due to prior achievement, gender, grade level, ethnicity, socioeconomic background and prior motivation.

Figure 1. Pathway to Achievement

Classroom Practices → Motivation to Learn → Academic Achievement
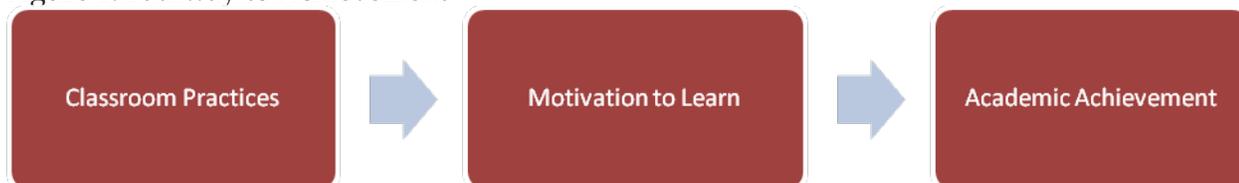
While all students in the district benefited from motivating and caring classroom practices, the most vulnerable students were the ones who may have benefited the most. In our analyses we looked closely at the experiences

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[2] The YDA links data across schools, public agencies, and community based organizations to answer key questions about youth. Participating agencies collectively identify shared questions that no single agency can answer alone.

of low-income students in the school district in comparison to their higher-income peers.   Figure 2 shows that higher ratings of classroom practices that encourage effort and understanding were associated with a smaller gap between higher- income and lower-income students' motivational beliefs. Similarly, Figure 3 shows that higher ratings of caring classrooms also were associated with a smaller gap between higher-income and lower-income students' motivational beliefs. In other words, among the low-income students in the school district, those who experienced classrooms that encouraged effort and understanding or created a caring classroom environment reported levels of motivational beliefs that were comparable to their higher-income peers. This increase in low-income students' motivational beliefs is of particular importance given the association between motivation and students' achievement outcomes. These particular results suggest that classroom practices have the potential to help close the achievement gap between low-income students and their higher-income peers.

Figure 2. Motivating Practices and Motivation, by Income Level
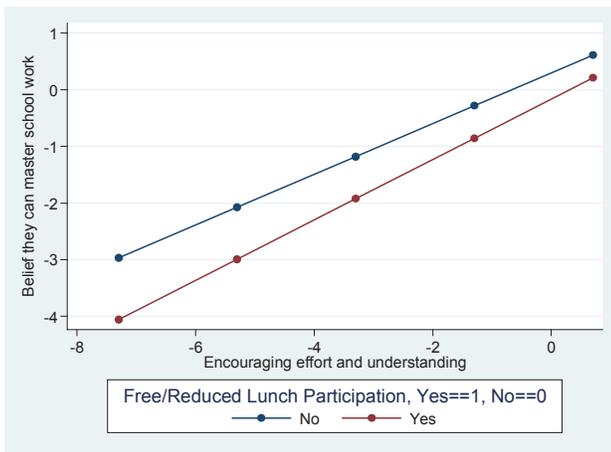
Figure 3. Caring Practices and Motivation, by Income Level
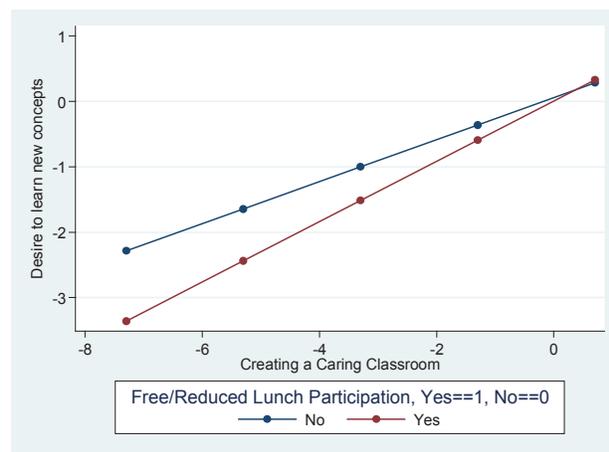
How are Changes in Classroom Practices Related to Changes in Motivation?

With two years of survey data, we were able to examine how changes in students' motivational beliefs were related to changes in the classroom practices they experienced.   In Figure 4 below, we present evidence that students' motivational beliefs seemed to be responsive to classroom practices each year. The y-axis represents students' beliefs that they can master their school work and the x-axis represents the year the students took the survey. In this analysis, we focused on classroom practices that encourage effort and understanding.   The blue line represents students who reported higher than average scores on the practice measure for their 2009 classroom, and then reported lower than average scores on the practice measure for their 2010 classroom. The red line represents students who reported lower than average practice scores in 2009 and higher than average practice scores in 2010. When students' experiences in their classroom changed, their motivation changed as well. For both groups of students represented in this figure, motivational beliefs in year 1 were significantly different than their beliefs in year 2. Students' motivational beliefs are not static traits; rather, these beliefs are dynamic and change in response to changes in the classroom.

Figure 4: Change in Motivation Associated with Change in Classroom Practices
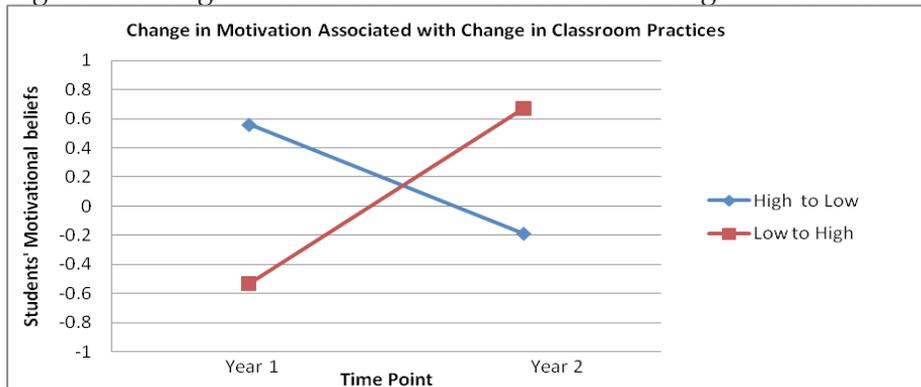
Conclusion

The Redwood City School District serves a diverse population of middle school students. Our research suggests that regardless of their gender, ethnicity, income-level or academic history, all middle school students in the district can benefit from practices that encourage effort and understanding as well as practices that create a caring classroom. These practices have the potential to foster positive motivational beliefs and shift administrators', teachers' and policymakers' thinking about strategies for improving students' learning experiences and outcomes. Specifically:

1. **Motivational beliefs are not static traits**. Students' motivational beliefs are dynamic and responsive to the learning context.

2. **Academic histories do not guarantee students' academic futures.** Strategies to improve students' motivational beliefs will likely lead to improved academic performance.

3. **Motivating and caring classroom practices can be easily integrated into academically rigorous lesson plans**. Our study did not include an intervention; rather, we measured practices that were being implemented "naturally" throughout an ethnically and economically diverse school district.

At a time when schools are under enormous pressure to improve test scores, it is critical to highlight the importance of students' motivational beliefs. When students are told that academic success is measured solely by a score on a test or always getting the right answer, they are less likely to truly engage in their learning and less likely to attain that higher test score. Conversely, students benefit the most from opportunities to learn in a caring and respectful environment that encourages students to learn from their mistakes, invest effort in their work and pursue deep understanding. Moreover, classroom practices have the potential to shift students' motivational beliefs and launch students on a positive developmental and educational trajectory. Our future research will look more closely at specific schools and specific classrooms to understand how these practices are employed.

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