



CAREERSTART: A MIDDLE SCHOOL STRATEGY FOR PROMOTING STUDENT SCHOOL ENGAGEMENT AND ACADEMIC SUCCESS

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Executive Summary

CareerStart is a middle school teaching strategy that attempts to increase the relevance of core curriculum courses in 6th, 7th and 8th grades. Teachers augment their instruction by giving examples of how what they are teaching is related to the careers and job skills of people in their communities. Example lessons are available on-line through *LearnNC* or teachers are encouraged to invent their own lessons. Currently, *CareerStart* lessons are being used in 7 school districts with 500 teachers and 15,000 students.

The purpose of *CareerStart* is to promote the relevance of instruction for middle school students, thereby enhancing the student's attention to the content of what is being taught in the core middle school courses of math, language arts, social studies and science. If students can get answers to their basic question of "Who really uses this information in the real world?" or "When will I ever really use this information when I leave school?" it is believed they will attend more to the lesson, see their education as important to them, get in trouble less often, increase their academic achievement, and stay in school to graduate. Since middle school attachment is key to later success and graduation in high school, *CareerStart* aims to promote better transitions into high school and improved labor force capacity building for our state and nation.

A longitudinal evaluation is being conducted of over 7,000 students in the Winston-Salem/Forsyth County middle schools. *CareerStart* lessons were introduced into a random sample of schools and teachers and students are being tracked from the beginning of 6th grade through 8th grade and beyond. This report provides data on students at the end of 8th grade taking into account their exposure to career relevant instruction in their core courses in 7th and 8th grades.

The findings reported here indicate that all of the projected outcomes are better for students when more of their teachers provide career-related examples in their classes. The data are clear: students with most of the teachers providing career illustrated lessons are significantly more likely than students not hearing career examples to 1) remain highly engaged in the schools, 2) report that they highly value their education, 3) have fewer unexcused absences, 4) are less likely to get into trouble and get suspended, and 5) perform better on their end-of-grade math and reading tests. All these findings are even more significant for lower-income and students of color and remain significant after introducing statistical controls for demographic characteristics of the students and their families.

In a focus group with 8th grade students in the fall, 2008, one young female student said: "I like it when they [her teachers] talk about career stuff, because then I'll get an idea of my future. But I would like it if they would do it a bit more." That is the objective of *CareerStart*.

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INTRODUCTION

Public schools today are preparing the next generation for our global workforce. Students are learning the basic concepts and skills that will be necessary for higher education, career training, and workforce engagement. The capacity of schools to fully prepare the next generation for the workforce, however, is uneven. Many students are maturing academically and making successful transitions into further education, training and employment. These young adults are becoming the technically and socially competent people that help our state and nation compete on the global economic stage. But too many of our students are failing, leaving school early, not gaining the critical skills or motivation they need to succeed, and reducing the capacity of our economy and workforce competitiveness.

The dropout rate from America's public schools is shockingly high. Only about 70% of our students are completing high school in 4 years. In North Carolina, we are close to the national average with a 69% graduation rate. Among children from families in poverty, less than half complete high school. And the drop out rate for our lowest-income students has INCREASED over the past decade, despite higher test scores and stronger accountability measures. This leaves too many young adults without the skills needed to compete for jobs in the labor market, putting them at risk for poverty, unemployment, delinquency, crime, and addictions.

Previous research at the University of North Carolina at Chapel Hill has demonstrated that the high dropout rate in high school is preceded by significant student disengagement in middle school. Most students begin middle school with high hopes and dreams for success in school and in life. But during the middle school years, too many students lose that vision and begin to succumb to lower levels of school engagement, connections to their parents and other adults, and are less likely to see their school as preparing them for future success. Too many of these students come to believe that school and course content are not relevant and begin to psychologically dropout. For these students, quality high school vocational programs come too late and are only minimally effective in workforce engagement. Students who have lost their hope are less likely to perform well on tests and more likely to transition into high school without the competencies they need to be successful in high school, or in life afterward.

To address these issues, the *CareerStart* strategy seeks to:

- Sustain high levels of student engagement over the middle school years
- Improve the value that students place on their education
- Help students explore their opportunities beyond high school
- Reduce unexcused absences and behavior problems linked to school suspensions
- Improve academic achievement and end-of-grade test scores
- Help students make successful transitions into high school and stay in school to graduate

THE CAREERSTART STRATEGY

CareerStart is a teacher-focused, school capacity-building strategy that attempts to positively influence the educational and workforce trajectory for all students, but especially those at higher risk for school failure. The *CareerStart* strategy is universal in that all students participate in the instruction, if their schools and teachers choose to participate. The objective of *CareerStart* is for teachers in Middle School core courses (math, language arts, science and social studies) to provide illustrations or examples from real jobs and careers that help students see how the course content they are teaching is being used outside the classroom. *CareerStart promotes relevance in the classroom.* Students in classrooms with operating *CareerStart* principles should be able to get answers to the often asked questions: "Who really uses this information in the real world?" or "When will I ever really use this information when I leave school?"

CareerStart is based on the following assumptions:

- Courses taught in middle schools are guided by NC Standard Course of Study objectives but practical illustrations of how course content can be related to real jobs are needed
- Teachers can make their courses more relevant when they understand the range of labor force opportunities in their community and the skills needed for these jobs
- Students will learn basic course content more readily when applications to the future workforce are provided by their teachers

CareerStart provides critical tools that help teachers implement their instruction in ways that improve the relevance of their instruction. For example, *CareerStart* provides short, high quality and easy-to-teach mini-lessons that core teachers in 6th, 7th and 8th grades can use to illustrate priority concepts that are part of the NC standard course of study. These lessons were prepared by teachers for teachers. There are 10 example lessons for each core course in each grade of Middle School. The lessons can be easily accessed via the web at *LearnNC*, an instructional website for teachers (example: <http://www.learnnc.org/lp/editions/CareerStart-grade6>). These lessons do not require any new content to be taught in the classroom. They simply provide teachers with creative ways to illustrate priority content with examples from a wide range of jobs and careers in which that content is being used. The jobs range from those that only require advanced technical training to those that require college or postgraduate degrees. In addition, *CareerStart* teachers receive updated email newsletters that keep them informed of new career connections to their courses and examples of how other teachers have augmented the *CareerStart* lessons. They are also provided with coaching on how to best develop these career connections in other aspects of their teaching. It is interesting to note that 85% of middle school teachers not exposed to *CareerStart* agreed that “Integration of career content into the standard curriculum is a helpful way to encourage students to consider possible jobs” but in interviews said they did not feel they were prepared to carry this out.

THE CAREERSTART EVALUATION

CareerStart is being rigorously evaluated with an experimental, longitudinal study of over 7,000 students in the Winston-Salem/Forsyth County Schools. There are 14 middle schools in the evaluation, 7 of which were randomly assigned to implement *CareerStart* and 7 serving as control schools. The first cohort of 3,200 students began 6th grade in the fall, 2005 and the second cohort began 6th grade in the fall, 2006. The first cohort is now in 9th grade. Baseline survey data were collected from all students beginning in 6th grade in 2005 as well as from their teachers. Continuing survey data on that cohort has been collected at the end of each grade. Teacher survey information was collected at the beginning of the study and is collected at the end of each year. Additional information is collected on the actual number of *CareerStart* lessons taught by each teacher and team at each school. Administrative data on the students, including end-of-grade test scores and student behavior data is collected each year.

The findings in this report are based on a sample of 2,879 students who attended school in all three middle school grades and completed 8th grade in 2007-2008. Students who were classified as exceptional, who moved schools between the 6th and 8th grades, or who did not complete a student survey in all three middle school grades were excluded from the original sample of 3,200 students. The sample is approximately 48% Caucasian, 33% African American, 13% Hispanic, and 6% other. Approximately 48% of the students are low-income and qualify for free/reduced lunch (FRL) and 39% live in a single parent household. The sample is evenly split with respect to gender.

CareerStart was new and only minimally implemented in the 6th grade and the revised curriculum lessons were implemented more fully in the 7th and 8th grades at 7 of the middle schools. The present analysis focuses on student reported use of career examples in their classrooms by their core teachers in math, science, language arts, and social studies. Thus, a student at the end of the 7th and 8th grades will have had the opportunity to report that none, one, two, three or all four of their teachers often

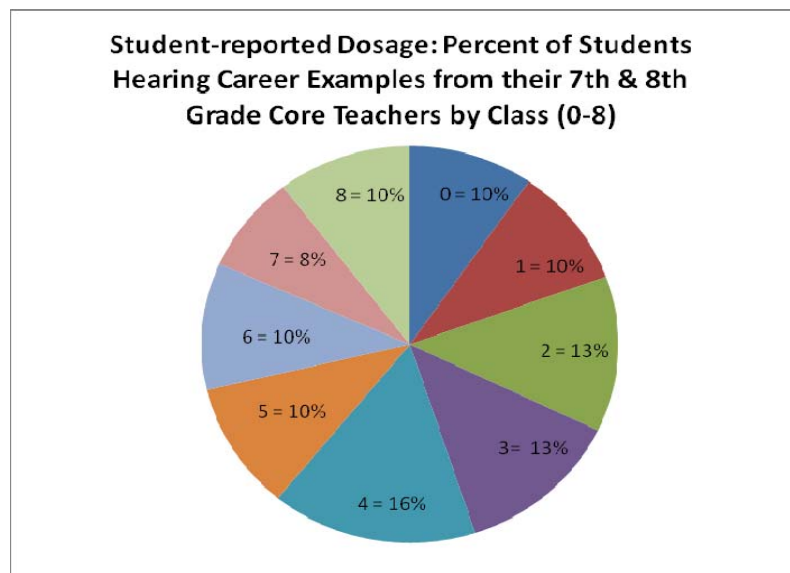
provided career examples to them in that grade. Thus, over the previous two years (7th and 8th grades), a student could report from 0 to 8 teachers giving career examples. An analysis of the impact of teacher use of *CareerStart* lessons on student reports of career examples being used in the classroom is now underway. Preliminary analysis indicates that students at the 3 schools with the most consistent implementation of *CareerStart* lessons averaged 4.5 teachers being reported as often providing career examples in their classes over these 2 grade levels. At the non-*CareerStart* schools, students reported having an average of 3.8 teachers giving these examples. Thus, consistent use of *CareerStart* lessons increased the likelihood of students reporting that their teachers often gave them career relevant instruction by about 20% over the use of this instructional technique being used by teachers normally.

CAREERSTART FINDINGS TO DATE

Measure of Career Relevant Instruction Dosage by Students

The range of students reporting that their teachers provided them with career examples is quite wide. Ten percent of students report that none of their core teachers offered them career related examples in their classes in the 7th and 8th grades. At the other extreme, 10% of students report that all of their core teachers provided these examples (Figure 1). In between, the distribution of instruction using career examples is quite even.

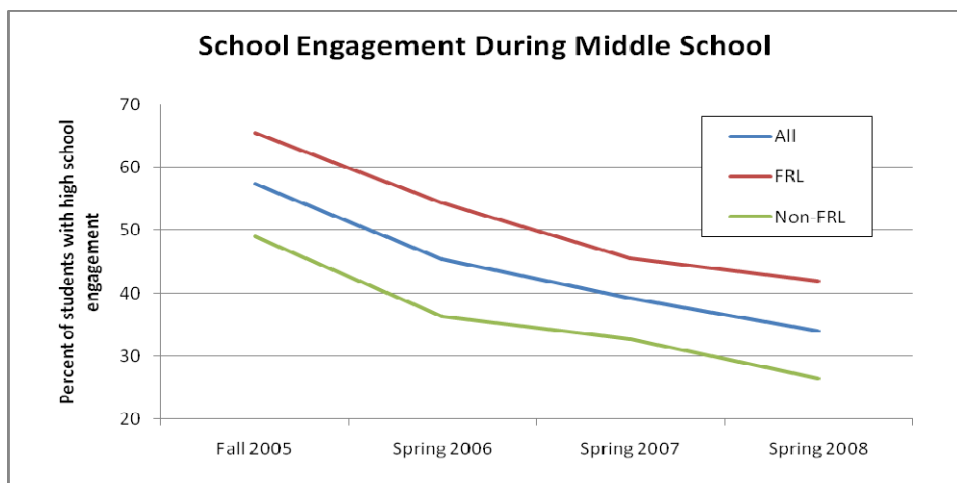
Figure 1 (Teachers vary in their use of career examples)



Impacts on Student School Engagement

Figure 2 (Engagement typically declines during middle school)

Student school engagement has been consistently measured from the beginning of 6th grade to the end of 8th grade. The measure of engagement was developed for the School Success Profile and consists of 3 statements that assess the extent to which students find school exciting, look forward to learning new things at school, and see school as being important in their lives.



The data indicate that school engagement declines dramatically over the middle school years (Figure 2). This is consistent with research from other studies as well. Lower income students who qualify for free and reduced lunch benefits (FRL) are more likely to report higher levels of engagement than upper income students (nFRL) but both groups decline similarly over time.

Students whose teachers often provide them with career examples are the most likely to sustain their higher school engagement over time (Figure 3). Among students with no teachers offering career examples, 17% are still highly engaged in 8th grade compared to 52% if most (7 or 8) teachers provide these examples. Another way of expressing the impact of career relevant instruction on student engagement is by examining the differences over 3 years in student engagement, controlled for the number of teachers providing career examples (data not shown). Here we find that students hearing no career examples experience a 20% decline in engagement compared to a 4% decline when most of their teachers offer them career examples as a regular part of their classes.

Figure 3 (school engagement higher if teachers use career examples)

Because school engagement can be linked to such factors as the student's race, gender, single parent status and their own previous levels of engagement, an analysis controlling for these factors was conducted with an Analysis of Covariance (Figure 4). This analysis allows an interpretation of the effects of career relevant instruction on student engagement after these controls are entered.

These data indicate that there is a very significant improvement in school engagement scores among those students who report more of their teachers providing career examples.

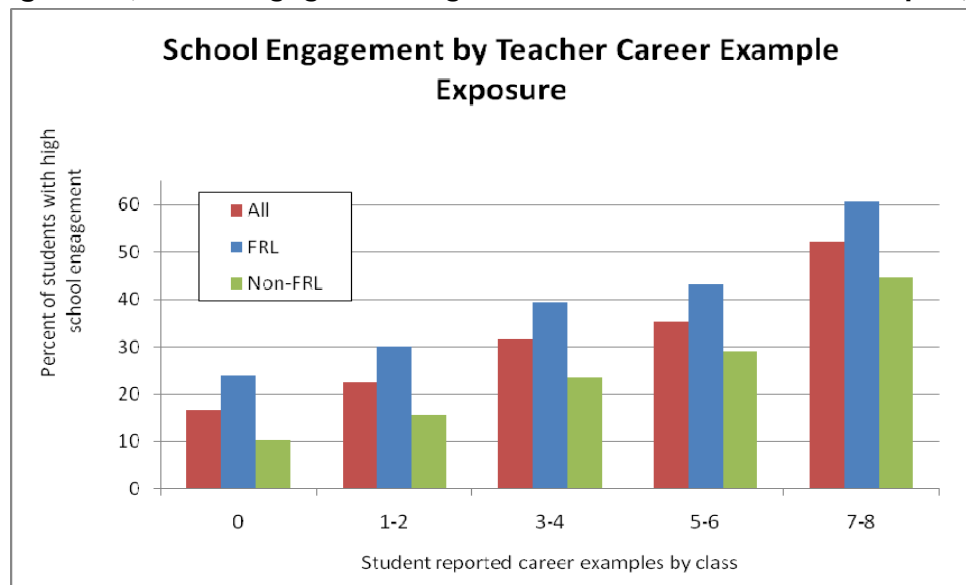
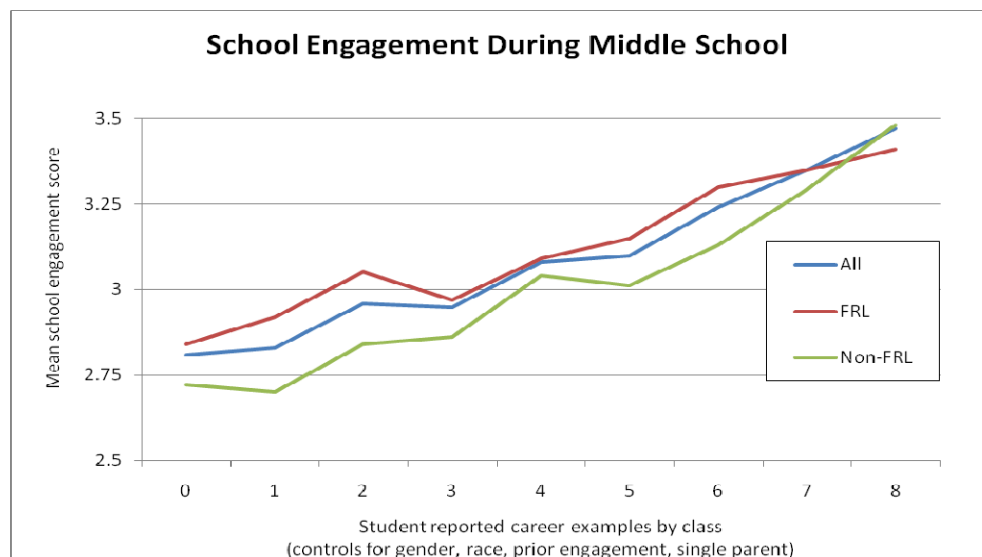


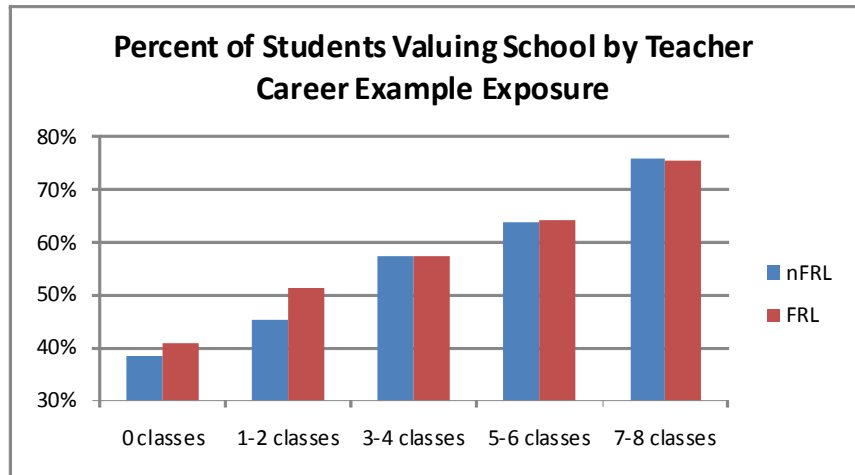
Figure 4 (Analysis of covariance with controls confirm effects)



Impacts on Student School Valuing

School valuing is also greater among students who are in classes where teachers offer more career examples (see Figure 5). School valuing is a measure of how well the school is viewed as a place for providing the skills and attributes necessary to be successful in life. This quality is very important when students are thinking about their future education and careers. Students who indicate that more of their teachers often provide career examples are much more likely to see the value of their education. School valuing appears to help all students, including those from lower and upper income families. The data are not shown here but the benefits are especially strong for Black and Hispanic students.

Figure 5 (school valuing higher if teachers use career examples)



Impacts on Future Career Thinking

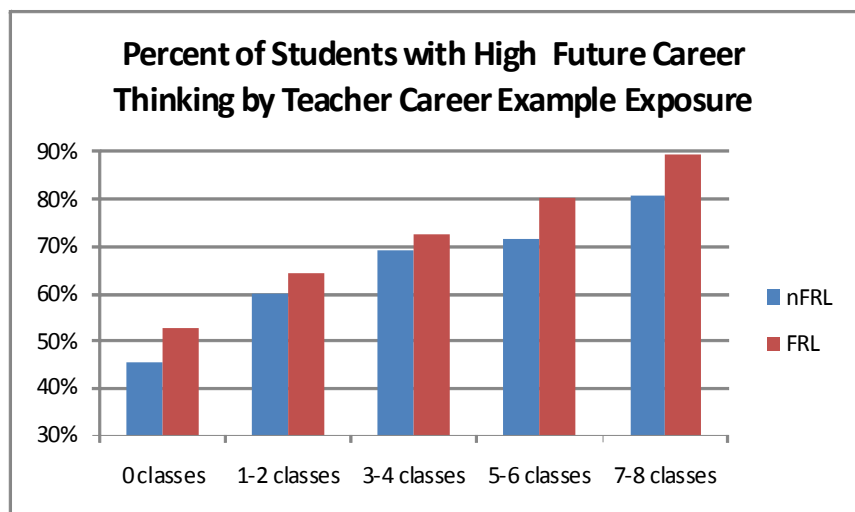
CareerStart and the use of career examples in the classroom should also have a direct effect on the future career exploration by students. To assess this, an index was included on the student survey that assessed students' thinking about the kinds of careers or jobs that they might explore for their future. At the end of 7th grade, 66% of students indicated that they were thinking a lot about the kinds of jobs they might have after they finish school. By the end of 8th grade, 70% of students were thinking a lot about this issue. These interests in future careers are similarly high for both lower and higher income youth but male youth are especially interested in thinking about future career possibilities, especially those from low-income families.

Figure 6 (Career exploration higher if teachers use career examples)

Again, when more teachers often use career examples in the classroom, the scores on *future career thinking* are much higher (see Figure 6). Hearing more examples of how course content applies to careers and jobs appears to stimulate student interest in their own career options in the future.

These findings on the impact of teacher use of career examples on career exploration and thinking are very strong.

Classroom discussions of how what is being taught is related to jobs and careers can have a very marked effect on how students are preparing themselves for their future education and career planning. The effects are positive for all students but the greatest impacts are on male students.

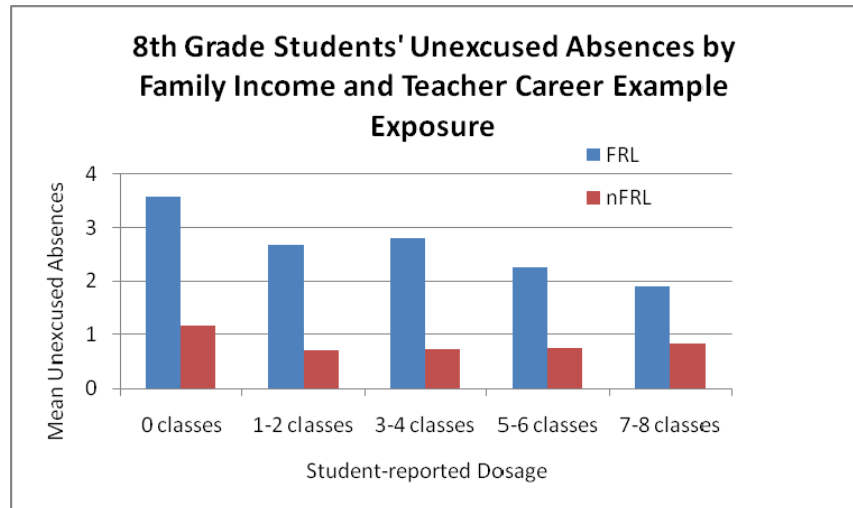


Impacts on Student Attendance and Behavior

When teachers use career examples in the classroom it has been shown that this improves student psycho-social school engagement (above) but behavioral engagement is just as important. This is measured by rates of student attendance, unexcused absences and behavior problem incidents that cause student suspensions. If students are attending to their lessons more, then these rates should improve as *CareerStart* strategies are implemented.

Figure 7 (Fewer unexcused absences for low-income students)

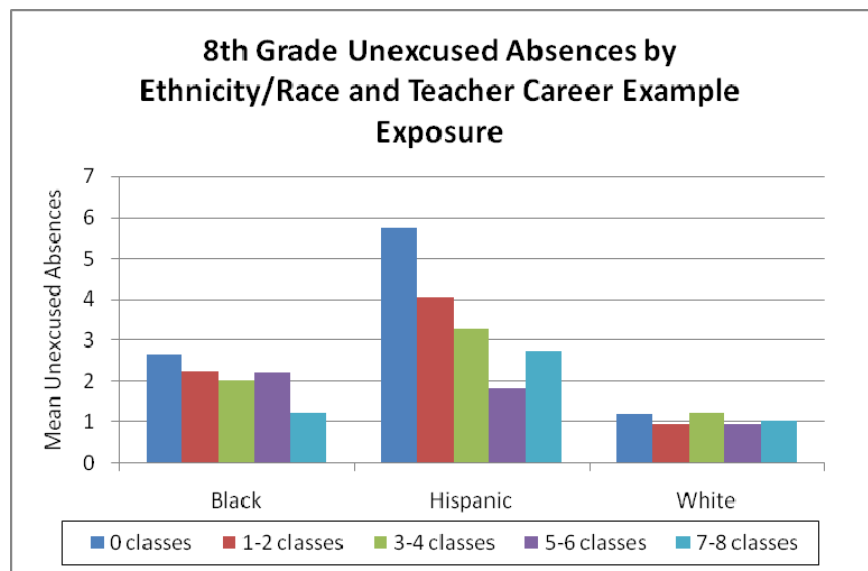
As expected, overall *rates of absences by students* declined as students heard more career-relevant examples in their core middle school classes. Total absences dropped from an average rate of 8.5 absences per year among students with no career examples to 6.3 absences per year for students with 7 or 8 teachers giving these examples. Unexcused absences dropped from 2.4 to 1.2 per student per year as exposure increased. The drop in *unexcused absences* for



lower income students was even more noticeable (see Figure 7). Among these students, the mean number of unexcused absences was 3.6 per year when none of their teachers offered career examples compared to 1.9 per year when most of their teachers provided these examples.

Figure 8 (Fewer unexcused absences for students of color)

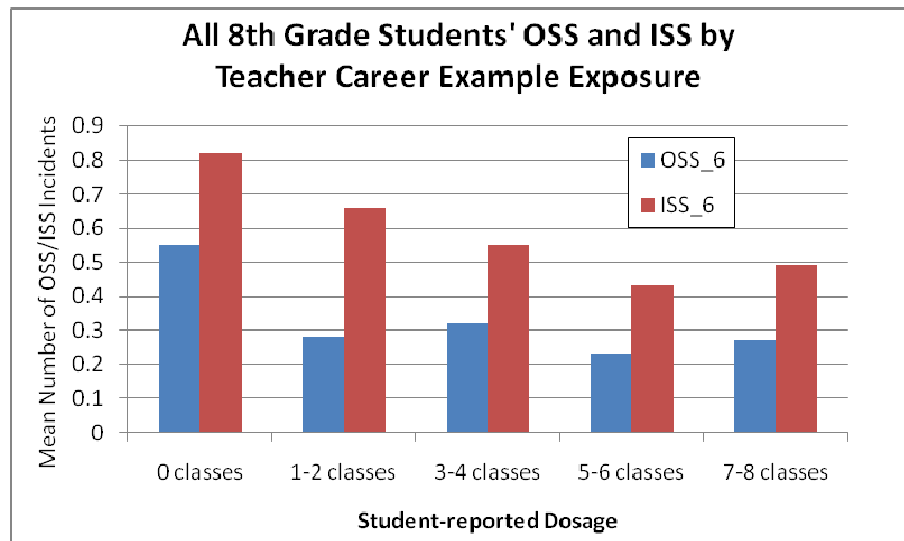
This drop in unexcused absences was especially noteworthy for Black and Hispanic students, many of whom came from lower income families (see Figure 8). While there was little change in these rates for White students, the unexcused absence rate for Black students dropped in half and for Hispanic students it was even greater.



Students who are experiencing more relevance in their classrooms were also expected to get into trouble at school less often and thus receive fewer in- or out-of-school suspensions. This hypothesis was also confirmed. The overall rate of *behavioral problem incidents* was lower for students with more teachers giving them career examples in their classrooms. Among students with any behavioral incident in the past year, the number of reported incidents declined from an average of 5.2 incidents per student when no career examples were used in classes to 3.3 when most teachers gave these examples as part of their teaching.

The *in-school suspension* (ISS) and *out-of-school suspension* (OSS) incidence rates were also significantly lower when students heard examples about careers from their teachers. For all students (Figure 9) there was a drop from 0.55 out-of-school suspensions per year to 0.28 per year when most teachers offered career examples. The drop was more significant for in-school suspensions; this decreased from 0.82 per student per year to less than 0.5 per student per year. For low-income students, the decrease in out-of-school suspensions dropped by over 50% with students averaging almost one (0.9) suspension per year if no teacher offered career examples to only 0.4 suspensions if 7 or 8 of their teachers provided these examples.

Figure 9 (Fewer in- (ISS) and out-of-school (OSS) suspensions)



Impacts on Student Achievement

CareerStart and the greater use of career examples in the classroom ultimately seeks to impact longer-term effects on student test performance, successful transitions into high school, and reduced dropout rates. These effects were expected to occur through shorter-term increases in school engagement and valuing, and through greater realization that middle school classes will benefit their future education and career trajectories. Thus far, we have seen positive effects from the classroom use of career illustrations on these more immediate outcomes but it will take longer to observe high school transition and dropout effects.

The data now confirm that student achievement, as measured by mastery on the NC end-of-grade math and reading tests, is higher among those students who have more of their teachers illustrating their instruction with career examples (see Figure 10). The benefits of this type of instruction appear to be greater for performance on math tests than on reading tests, but this may reflect the greater challenge in stimulating achievement in reading compared to mathematics in the middle school grades.

Figure 10 (Higher rates of passing end-of-grade mastery tests)

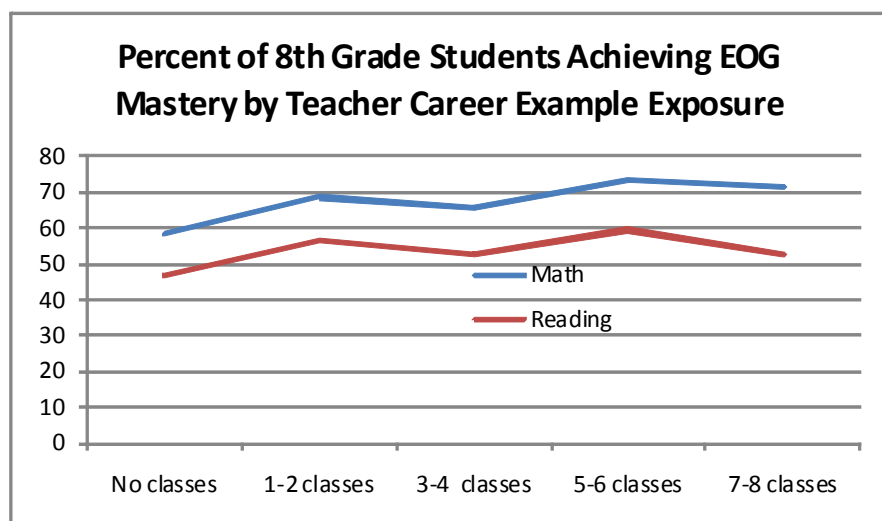
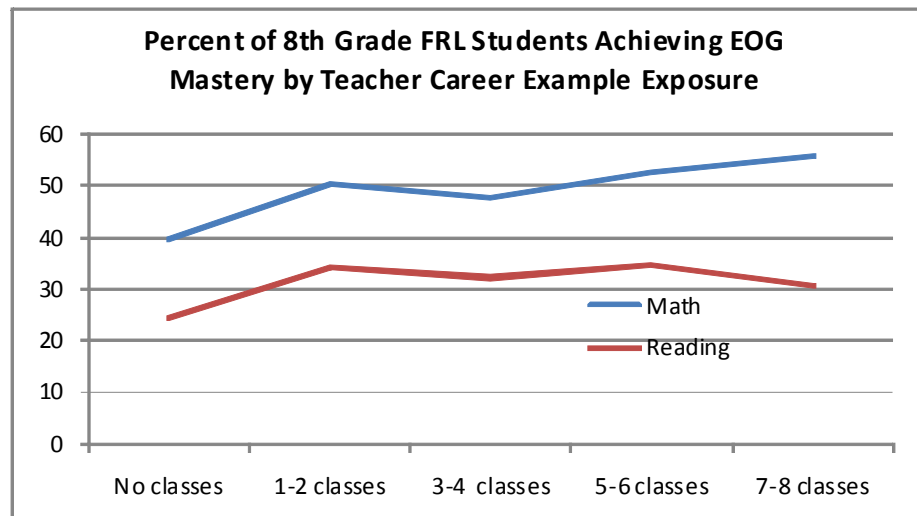


Figure 11 (Higher rates of passing EOGs for low-income students)

Among low-income students the effects of teachers providing career examples is even more noteworthy (see Figure 11). The percent of students achieving mastery on reading improves from 24% to 35%, with an unusual pattern of dropping to 30% for those with 7 or 8 teachers giving them career examples. The effects on achieving mastery on math EOG tests are more consistent only 40% achieving mastery if none of

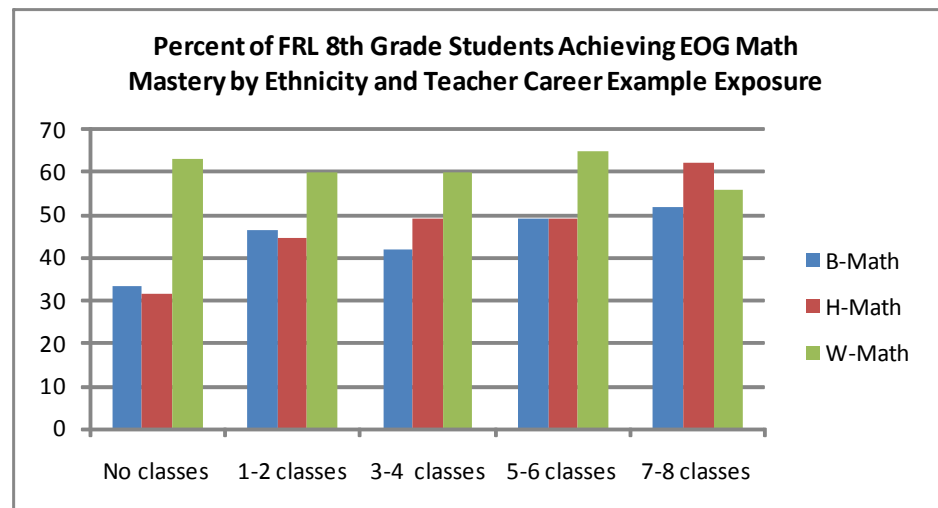
their teachers consistently offered career examples to 57% achieving mastery if nearly all their teachers did so. The strongest effects on both math and reading are for low-income male students with the percent of students achieving mastery increasing from 17% to 30% on the reading EOG test and from 32% to 59% on the math EOG test.

**Figure 12 (Closing the achievement gap on math EOG tests)**

Among lower-income students on free and reduced lunch (FRL), the percent of students passing their math EOG test varies significantly according to the race and ethnicity of the students. Among White (W) students, there is no significant change in the percent achieving mastery according to the number of teachers providing career examples in their classrooms (see Figure 12). But among

students who are Black (B) or Hispanic (H), the percent passing is directly related to the number of teachers that offer them career relevant examples as part of their teaching. In fact, the large achievement gap among students with no teachers offering career examples is largely erased among students who have most of their teachers offering this kind of instruction. The percent of low-income Black students passing their math EOG increases from 33% to 52%. The percent of low-income Hispanic students passing increases from 31% to 62%. These are large and significant effects.

A regression analysis was also conducted to assess the contribution of student reported teacher use of career examples in the classroom on 8th grade EOG math and reading achievement (not shown). This analysis controlled for the level of EOG mastery at the end of 6th grade, low-income and single parent status, gender and race. In this analysis the effects of teacher career example exposure was significant after these controls were introduced in the analysis, but the effects were especially significant for low-income students and for math EOG tests.



CONCLUSIONS

The findings from this evaluation confirm that the *CareerStart* approach of encouraging core teachers in middle schools to illustrate their teaching with examples from jobs and careers does benefit their students. When students hear more career related examples from more of their teachers, they are much more likely to be engaged in their school, see the value of their education for their future, attend class more regularly, have fewer unexcused absences, explore their own future connections to the kinds of jobs and careers that they may anticipate, and perform better on their end of grade tests. All these benefits are statistically significant and occur even after controlling for other factors that can influence these outcomes, including normal changes in these outcomes over time.

Teachers in *CareerStart* schools are more likely to be seen by their students as providing career-related illustrations in the classroom. It is important to recognize, however, that *CareerStart* lessons only represent about 6% (about 60 hours of the 1000 mandated hours) of the total instructional time in the classroom, so by themselves, these lessons are not fully sufficient to produce these positive outcomes. To be effective, teachers would need to illustrate other course content as well so that this strategy becomes a more natural way of teaching. However, the *CareerStart* lessons do provide excellent examples that teachers can build upon and use to motivate themselves and each other to offer these kinds of illustrations in other areas of their course content.

CareerStart oriented lessons and examples appear to benefit all students, irrespective of their gender, race/ethnicity, or parental income status. But the effects are somewhat more positive for lower income students, many of whom would otherwise experience more disengagement from school and lose the connection between their education and future success. While male and female students appear to similarly benefit from having teachers offer them career relevant instruction, male students, especially those from lower income families, are more likely to profit in terms of their future career thinking and exploration, higher rates of attendance and lower likelihood of being suspended from school, and on their math and reading end-of-grade tests. The data in this evaluation indicates that middle school male students are typically less likely than female students to be thinking about their futures, including their careers and connections between what they are learning and how their education will help them achieve success in life. Perhaps through teachers helping them make this connection by providing job and career illustrations, these male students see the relevance and applicability of what they are being taught. While the pattern of effects is slightly different for male and female students, the data in this report indicate that critical student outcomes can be promoted and achieved through a relatively modest intervention that is inexpensive to implement, universal in approach, and easily integrated into the teaching styles of middle school teachers. The return on investment from this CareerStart strategy includes students who are better connected to their education, more likely to achieve their academic potential, and actively thinking about the benefits of their education for their future careers.

Overall, the potential impact of *CareerStart* and the use of career examples by teachers is still unfolding. The students in our sample represent all the students in a moderately large school district who have been followed from the beginning of 6th grade through 8th grade. We understand, however, that *CareerStart* is still evolving as a teacher development strategy and each year the quality of the lessons is improving and the value of the strategy is growing in acceptance. The students now in 9th grade are always at the front of the program development wave and their teachers are the pioneers in implementing the program. So the outcomes we have demonstrated are coming from early adopters of the program and we would expect even better results from a more mature program. But the results are very promising and certainly indicate that promoting relevance in the middle school classroom by the core teachers who carry the responsibility for the curriculum is a worthy strategy that can pay significant dividends for the next generation who will matriculate into high school and beyond.

In a focus group with 8th grade students in the fall, 2008, one young female student said: "I like it when they [her teachers] talk about career stuff, because then I'll get an idea of my future. But I would like it if they would do it a bit more." That is the objective of *CareerStart*.