The Effects of School Safety on School Performance

Christopher Duszka
Florida International University
United States of America

Abstract

The effects of school safety on school performance are analyzed in this study. 359 public schools in the Miami-Dade school district are analyzed over a 3 year time period. School performance is gauged by a school's combined FCAT score provided by the Miami-Dade Public Schools district. A mean school safety score is constructed for each school from the results of an annual school climate survey that assesses students' perceptions of school safety. It was found using a panel random effects model that, in elementary schools, a 1 percentage point increase in a school's mean school safety score increases a school's FCAT score by 18 points, on average. No relationship was found in middle schools or high schools. Possible reasons for the discrepancy in findings between elementary schools and middle and high schools are discussed.

Literature Review

With funding being tied to academic scores even more so now due to policies like the No Child Left Behind Act, schools have an even greater interest in ensuring that their student population achieve high marks on academic measures like standardized tests. One promising area that schools could invest in to raise their academic scores would be in school safety. While there have been only a few studies that examined the effects of school safety on students' academic abilities in school, these few studies have shown that school safety has a significant impact on academic achievement. Milam et al. (2010), for instance, found that increasing perceived safety increased achievement on standardized math and reading tests from 16 to 22% for Baltimore elementary schools. Schools that have lower academic scores tend to have a student population that does not feel safe within their schools. Conversely, schools that have higher academic scores tend to have a student population that feels safe within their schools.

Perceptions of school safety can be affected by a myriad of factors. The presence of gangs and drug problems can negatively affect students' perceptions of school safety (Schreck & Miller, 2003). Security, surveillance, and other preventative measures can increase or decrease students' feelings of safety within their schools depending on how they are implemented (Kitsantas et al., 2004; Schreck & Miller, 2003). Schools that have smaller student populations are more likely to foster feelings of safeness than schools with larger school populations (Bowen et al., 2000). Where the school is located also has profound implications on perceptions of school safety. Bosworth et al (2009), for instance, found in their study that neighborhood surroundings have a very influential affect on students' perceptions of safety. Schools that are located in neighborhoods that have high poverty and high crime rates have been shown to have a negative influence on perceptions of school safety (Laub & Lauritsen, 1998).

Multiple factors influence students' ability to achieve academically in school. English language learners face additional obstacles in school, like language barriers, that may prevent them from achieving academically at the same level as their English peers. However, English language learners can achieve at the same level or even better than their English peers if they are given strong academic and cognitive support and are placed in bilingual programs that teach material that is grade-appropriate (Collier & Thomas, 2004). If English Language Learners become proficient enough in English, their Bilingualism can be an asset. Research has demonstrated that Bilingual students commonly achieve higher scores in areas like reading and math than their monolingual English peers (Golash-Boza, 2005; Hao & Bonstead-Bruns, 1998; Portes & Schauffler, 1994).

A school's student population size has been shown to influence academic achievement. Smaller school size has been demonstrated to positively influence student's academic achievement. However, research on how small a school should be is not clear. Cotton (1996) demonstrated that elementary schools should have between 300 and 400 students and secondary schools should have between 400 and 800 students. Lee and Smith (1997) argued that secondary schools will benefit more if they have between 600 and 900 students so that an appropriate level of curriculum diversity is possible.

Research on student population size has found a variety of reasons as to why smaller schools benefit students academically. Cotton (1996), in his meta-analysis of 103 studies, found a multitude of reasons. Behavioral problems like truancy, violence, gang participation, and substance usage is less likely to occur in smaller schools. School climate in general is more positive in smaller schools than larger ones. Students are more likely to participate in extracurricular activities in smaller schools than larger ones. Attendance, especially among minority and economically disadvantaged students, is higher among students in smaller schools than larger ones and the two groups benefit the most academically from smaller schools. Self-esteem is also higher among students in smaller schools than larger ones.

Teacher experience also affects students' academic achievement. A number of studies demonstrated that newly hired teachers are less effective than teachers with some experience (Rice, 2013). An instructor's teaching ability increases dramatically in their first year of teaching. However, after the first year of teaching, there are diminishing returns on subsequent years of teaching, with there being no returns after approximately 4 years of teaching (Boyd et al., 2008). Less experienced teachers are more likely to teach in high-poverty schools. In addition, teacher experience is less influential on academic achievement in high-poverty schools (Sass et al.,2010). Teachers with higher qualifications are also more likely to teach in low-poverty schools.

Prior research has demonstrated that safer school environments tend to have higher levels of academic achievement. Milam et al.(2010) demonstrated that safer elementary schools had higher academic scores. Bowen (1999) and Gronna and Chin-Chance (1999) demonstrated the same effect of school safety on school performance among middle schoolers and high schoolers. Based on prior research on the effects of school safety on school performance, it is expected in this study that 1.) School safety will affect school performance in elementary schools, middle schools, and high schools 2.) The effect of school safety on school performance will be large.

Methodology

For this study, 359 public schools in Miami-Dade County were utilized. 229 were elementary schools, 75 were middle schools, and 55 were high schools. The study covers a span of 3 years covering from the 2007-2008 through the 2009-2010 schools years, totaling 1,077 observations. A panel random effects model with robust standard errors was utilized. Robust standard errors were used to take into account heteroskedasticity as well as the non-normal distribution of some of the variables. Random errors were utilized instead of fixed effects because it is expected that there will be more cross-sectional differences between the schools than variations within schools that occur over time. In addition, there were many variables in the study that changed very gradually over time. For such cases, a random effects model is recommended (Clark & Linzer, 2012, p.9). A Breusch and Pagan Lagrangian multiplier test for random effects was utilized to see if a random effects model is appropriate. The null hypothesis of that test was rejected and it was concluded that a random effects model is appropriate. Separate models were utilized for elementary, middle, and high schools to take into account the myriad of differences between these three types of schools. The elementary school model had a total of 685 observations, the middle school model had a total of 224 observations, and the high school model had a total of 164 observations. The data was unbalanced.

School achievement, the dependent variable of this study, was measured per school using each school's Florida Comprehensive Assessment Test (FCAT) combined score. The FCAT is a standardized test that is given annually to Florida students that tests students' abilities in reading, math, writing, and science. The FCAT writing section is administered in February and the math, reading, and science portions are administered in March. The FCAT combined score per school is calculated by taking the sum of the percentage of students that passed per subject area and the percent of the lowest 25% making learning gains in the math and reading sections. The FCAT combined score is used by the Florida Department of Education to assess how well each school is in meeting the learning standards set forth by Florida.

Performance grades are based off of these FCAT combined scores, with schools being eligible to receive additional funding if they either receive a performance grade of an A or have improved by at least one performance grade. This data came from the *School Performance Grades Report* that is provided by the Miami-Dade Public Schools district.

To measure the safety level of each school, the primary independent variable for this study, the annual *School Climate Survey* results from the 2007-2008 through the 2009-2010 schools years was utilized. The purpose of the school climate survey is for the Miami-Dade Public Schools district to gather information about how students feel about various characteristics of their schools and to assess how schools can be improved. A random sample of students is selected per school each year to participate in the surveys. The surveys are administered in the months of January and February. Participating students answer survey items that are on the survey through a likert scale that has the options strongly agree, agree, undecided/unknown, disagree, and strongly disagree. The Miami-Dade Public Schools district reports per survey item the percentage of respondents from a specific school that answered strongly agree, agree, disagree, undecided/unknown, disagree, and strongly disagree. The survey item "I feel safe at my school" was used to assess the safety level of each school. Specifically, a mean safe score was created for each school using the survey item. Strongly agree was assigned a value of 5, agree was assigned a value of 4, undecided/unknown was assigned a value of 3, disagree was assigned a value of 2, and strongly disagree was assigned a value of 1. Using this method allows the percent of each option to be taken into calculation. However, this method assumes that the options are equi-distant for all individuals; this is probably not going to be the case for many of the sampled students.

The number of duplicated out-of-school suspensions was used as a proxy for the number of delinquencies being committed at a school. Duplicated out-of-school suspensions were used instead of unduplicated out-of-school suspensions because duplicated takes into consideration multiple suspensions per suspended student, which is expected to better measure disciplinary issues. Duplicated suspensions data was derived from the *Attendance, Movement, Mobility, and Suspensions* report that is provided annually by the Miami-Dade Public Schools district. To account for student population, the number of suspensions per 100 students was calculated. The attendance rate of each school was also derived from this report. The attendance rate was calculated by dividing the total number of days present (calculated by taking the sum of the total number of days each student was present) by the total number of days (calculated by multiplying the total number of school days with the total student population).

The *Florida's School Public Accountability Report*, available from the Florida Department of Education on an annual basis, provided data for many of the other independent variables. The student population of each school, the percentage of students per school that were economically disadvantaged (the percent of students that were eligible for reduced or free school lunches), the percent of students that were black, the percentage of students that were English Language Learners, the percentage of students that were migrant (students whose family moved frequently, usually for agricultural work), the percent of teachers that had at least a Masters degree (used to measure the level of teacher professionalism),and the percent of teachers that were newly hired (used as a proxy for the level of teacher experience) were all derived from this report.

Descriptive Statistics

The Miami-Dade Public Schools district provides schooling for a large number of students. The district served 345,815 students in the 2009-2010 school year. The district is largely composed of Hispanic students, with Hispanic students having had made up 65% of the total student population in the 2009-2010 school year. Black students made up 25% and white students made up 9% of the total student population in the 2009-2010 school year. These figures are largely similar to the 2007-2008 and 2008-2009 school years, with the Hispanic percentage having had risen slightly and the white and black percentages having had decreased slightly during this study's time period. There was a significant amount of variation between the schools in regards to their racial and ethnic compositions.

A large percentage of the students were also economically disadvantaged, with 68% of students in the district having had been eligible for reduced or free lunch in the 2009-2010 school year. This percentage is significantly higher than the 2007-2008 school year (59%) and the 2008-2009 school year (63%). This large increase was largely due to the Great Recession in the United States that occurred during this time period. There was a significant amount of variation between the schools in regards to the percentage of students who were economically disadvantaged.

A significant portion of the students in the district were also English Language Learners. 23.7 percent of students were English Language Learners in the 2009-2010 school year. This figure remained largely the same throughout this study's time period, decreasing slightly since the 2007-2008 school year. There was a significant amount of variation between the schools in regards to the percentage of students who were English Language Learners.

The majority of the schools had little to no migrant students. Elementary schools had, on average, a higher percentage of migrant students than middles schools or high schools. The amount of variation between most of the schools in regards to the percentage of migrant students was small, although there were a number of schools that deviated significantly from the mean.

High schools had, on average, substantially larger student populations (mean=1,687) than middle schools (mean=843) or elementary schools (mean=721). High schools also had the most variation. The high schools had a standard deviation of 1,276, whereas middle schools had a standard deviation of 464 and elementary schools had a standard deviation of 323. The high school with the lowest student population had 10 students and the high school with the largest student population had 4,247. The middle school with the lowest student population had 12 students and the middle school with the highest student population had 2,152 students. The elementary school with the lowest student population had 30 students and the elementary school with the highest student population had 2,108 students.

Middle schools had, on average, more suspensions per 100 students (mean = 47) than high schools (mean=37) and elementary schools (mean=3.5). There were substantial variations between schools in regards to their suspension ratios, with high schools having had the greatest variation in their suspension ratios.

Elementary schools had, on average, a higher attendance rate (mean=96%) than middle schools (mean=95%) and high schools (mean=93%). There was a moderate amount of variation between most schools in regards to attendance rate, with high schools having had the most variation.

High schools had, on average, a higher percentage of teachers with at least a Masters Degree (mean=44%) than middle schools (mean=36%) and elementary schools (mean=40%). There was substantial amount variation between the schools in regards to the percentage of teachers with at least a Masters Degree, especially among middle schools.

High schools had, on average, a higher percentage of new teachers (mean=26%) than middle schools (mean=23%) and elementary schools (mean=16%). There was a large amount of variation between schools, especially among high schools.

For the elementary schools, the average safety score was 4.2. This was higher than the average safety score of 3.7 for middle schools and 3.8 for high schools. This indicates that, on average, students in elementary schools felt safer than students in middle schools and high schools. Elementary schools also had the least variance in terms of mean safety scores. The standard deviation for elementary schools was 0.34, whereas middle schools and high schools both had standard deviations of 0.46. The lowest mean safety score for an elementary school was 3.0 and the highest was 4.96. The lowest mean safety score for a middle school was 2.42 and the highest was 4.7. The lowest mean safety score for a high school was 2.69 and the highest was 4.78.

The Miami-Dade Public School district as a whole scored slightly below state averages in all subject areas for all years on the FCAT. Elementary schools, on average, scored higher (mean = 540) than middle schools (mean=518) and high schools (mean=489). High schools had slightly more variance than elementary schools or middle schools. High schools had a standard deviation of 88, whereas elementary schools had a standard deviation of 73 and middle schools had a standard deviation of 72. The lowest scoring high school scored 228 points and the highest scoring high school scored 712 points. The lowest scoring elementary school scored 272 points and the highest scoring elementary school scored 706 points. The lowest scoring middle school scored 330 points and the highest scoring middle school scored 733 points.

Many of the variables had standard deviations that exceeded their means, which indicates that there is a substantial amount of variation in the data.

Figures A through C below provides summary statistics for the elementary, middle, and high school models.

Figure A: Elementary School Model

Variable	Mean	Std. Dev.	Min	Max
FCAT Score	540	73	272	706
% Black	31	35	0	98.5
% Econ Dis	70	24	2	99.8
% ELL	33	19	0	78.4
% Migrant	0.2	1.1	0	10.8
Mean Safe Score	4.2	0.34	3	4.96
Attendance Rate	96	1.1	90.8	98.5
% At Least Masters	40	13.4	0	74.4
% New Teacher	16	19.8	0	100
Suspension Rate	3.5	5.7	0	52
Student Pop.	721	324	30	2,108

Figure B: Middle School Model

Variable	Mean	Std. Dev.	Min	Max
FCAT Score	518	72	330	733
% Black	29	32	0	96.8
% Econ Dis	68	23	3.2	97.8
% ELL	11	7.4	0	35.5
% Migrant	0.36	1.4	0	9.5
Mean Safe Score	3.7	0.46	2.4	4.7
Attendance Rate	95	1.7	59	98.4
% At Least Masters	36	17.5	0	100
% New Teacher	23	25	0	100
Suspension Rate	47	40	0	202
Student Pop.	843	464	12	2,152

Figure C: High School Model

Variable	Mean	Std. Dev.	Min	Max
FCAT Score	489	88	228	712
% Black	25	29	0	94.4
% Econ Dis	55	20	0	100
% ELL	11	8.4	0	38.7
% Migrant	0.66	6.4	0	84.6
Mean Safe Score	3.8	0.45	2.69	4.78
Attendance Rate	93	4.1	63.7	97.4
% At Least Masters	44	14.5	0	100
% New Teacher	26	28.1	0	100
Suspension Rate	37.1	36.2	0	231
Student Pop.	1,687	1,276	10	4,247

Results

For the elementary model, the mean safety score of a school was statistically significant ($p < 0.01$). On average, an increase of 1 percentage point in the mean school safety score resulted in the school's combined FCAT score increasing by approximately 18 points, on average. Every variable in the model was statistically significant with the exceptions of student population and the percentage of English Language Learners.

When all variables were standardized, it became possible to compare the magnitude of a variable to other variables. The effect of mean safety score on a school's combined FCAT score was smaller than all other variables with the exceptions of the percentage of English Language Learners and student population.

Attendance had the highest effect on a school's combined FCAT score; its effect being 6 times stronger than that of a school's mean safety score. The effect of mean safety score on a school's combined FCAT score is small relative to other variables.

For both the middle school and high school models, a school's mean safety score was very statistically insignificant. For the high school model, the only other variables that were statistically significant were the attendance rate, the percent of students that were English Language Learners, and the percent of students that were black. The ELL variable had the strongest influence on a school's mean safety score in this model. For the middle school model, the only variables that were statistically significant were the percentage of students that were black, the percentage of students that were economically disadvantaged, and the attendance rate. The attendance rate had the strongest influence on a school's mean safety score in this model.

For all the models, the p-values of the Wald Chi-Square tests were statistically significant, indicating that the coefficients in the model, taken together, were statistically significant. In all the models, all the variables, taken together, explained a substantial amount of variance in the schools' FCAT scores. For the elementary school model, the overall adjusted R-squared value was 0.66. For the middle school model, the overall R-squared value was 0.62. For the high school model, the overall adjusted R-squared value was 0.67.

Multicollinearity was not an issue for any of the models. The VIF test with the uncentered option reported sufficiently low VIF scores for all variables.

Figures D-F provides the panel analysis for elementary, middle, and high schools with standardized and unstandardized variables.

Figure D: Elementary School Panel Analysis

FCAT Score	Adjusted Coef.	Unadjusted Coef.	Robust S.E.	P > l z l
% Black	-.36	-.83	.17 (.07)	0.000***
% ELL	-.09	-.37	.23 (.06)	0.112
% Econ Dis	-.14	-.46	.20 (.06)	0.026*
% Migrant	-.15	-4.18	1.72 (.06)	0.015*
Mean Safe Score	.10	17.8	7.13 (.04)	0.013*
Attendance Rate	.61	21.5	2.93 (.08)	0.000***
% At Least Masters	.11	.60	.20 (.04)	0.003**
% New Teacher	-.12	-.40	.12 (.04)	0.001**
Suspension Rate	-.47	-1.20	.40 (.16)	0.003**
Student Pop.	-.003	-.0008	.007 (.03)	0.916

*** (p < 0.001) ** (p < 0.01) * (p < 0.05) ( ) = Adjusted Robust Standard Errors

Figure E: Middle School Panel Analysis (Standardized Variables)

FCAT Score	Adjusted Coef.	Unadjusted Coef.	Robust S.E.	P > l z l
% Black	-.25	-.58	.18 (.08)	0.001**
% ELL	.09	-.37	1.2 (.30)	0.755
% Econ Dis	-.23	-.77	.26 (.08)	0.003**
% Migrant	-.04	-1.1	3.8 (.14)	0.757
Mean Safe Score	.007	1.2	10.7 (.06)	0.911
Attendance Rate	.28	10.0	3.1 (.09)	0.001**
% At Least Masters	-.05	-.24	.45 (.09)	0.593
% New Teacher	-.06	-.19	.21 (.06)	0.366
Suspension Rate	-.07	-.17	.10 (.04)	0.079
Student Pop.	.13	.01	.01 (.11)	0.236

*** (p < 0.001) ** (p < 0.01) * (p < 0.05) ( ) = Adjusted Robust Standard Errors

Figure F: High School Panel Analysis (Standardized Variables)

FCAT Score	Adjusted Coef.	Unadjusted Coef.	Robust S.E.	P > l z l
% Black	-.63	-1.5	.32 (.14)	0.000***
% ELL	-.69	-2.8	.76 (.19)	0.000***
% Econ Dis	-.02	-.06	.26 (.08)	0.812
% Migrant	-.29	-8.1	5.4 (.19)	0.133
Mean Safe Score	.01	2.5	9.7 (.06)	0.796
Attendance Rate	.19	6.8	1.6 (.05)	0.000***
% At Least Masters	.05	.28	.34 (.06)	0.407
% New Teacher	.01	.04	.18 (.05)	0.840
Suspension Rate	-.07	-.02	.11 (.04)	0.870
Student Pop.	-0.38	-.004	.005 (.05)	0.408

*** ($p < 0.001$) ** ($p < 0.01$) * ($p < 0.05$) ( ) = Adjusted Robust Standard Errors

Discussion

Perceived school safety influenced a school's FCAT combined score for elementary schools. The effect was positive, but small relative to other variables, with a 1 standard deviation increase (0.34 percentage points) increasing the combined FCAT score by only approximately 6 points. This would only represent a 1 to 2 percent increase in the schools' combined FCAT score. Even a 1 percentage change increase (which would be a change of 3 standard deviations) would only increase a school's combined FCAT score by 18 points, which is, at most, a 6 percent increase. This stands in contrast to a study done by Milam et al. (2010), which found that a 1 percentage change in an elementary school's mean safety score resulted in a school's achievement score increasing from 16 to 22 percent. The discrepancy between this study and the study conducted by Milam et al. (2010) could be due to this study controlling for important variables that were not controlled for in the Milam et al. (2010) study like the degree of disciplinary problems, the attendance rate, and the degree of teacher professionalism and experience in a school. By not controlling for these variables, a study could potentially suffer from misspecification and omitted variable bias. In addition, this study was able to control for historical events by using data from multiple school years. Controlling for random historical events allows estimates to be more precise.

This study failed to find a relationship between perceived school safety and academic achievement in middle schools and high schools. This finding conflicts with a study conducted by Bowen (1999) that found an association between perceived school safety and academic achievement in middle school and high schools. However, that study did not take into account important variables like the degree of disciplinary problems in a school, the attendance of the respondents, and the degree of teacher professionalism and experience in a respondent's school. However, some of these variables may have been partially controlled for by taking into account the locations of where the respondents attended school (urban, rural, or suburban location).

A study conducted by Gronna and Chin-Chance (1999) also found an association between school safety and school performance among 8th grade students from various schools, but they also failed to take into account important variables like attendance and the degree of teacher professionalism and experience. They also operationalized school safety as the number of suspensions due to the commission of a major offense and the number of suspensions due to the commission of a lesser offense. The number of suspensions, however, is not just a proxy measure for school safety, but also is a proxy for the degree of disciplinary problems present in a school environment; disciplinary issues can lower academic performance by creating a disruptive environment that make learning more difficult. In addition, the number of suspensions may represent not just the degree of school safety and the presence of disruptive learning environments, but also can represent how punitive a school administration is in regards to behavioral issues.

There are several possible reasons as to why academic achievement suffers from less safe school environments in elementary schools, but not in middle schools and high schools. 1.) It is possible that elementary students' ability to learn is more disrupted by being in unsafe environments than middle school or high school students due to being younger and/or being less experienced dealing with unsafe environments. 2.) Middle Schoolers and high schoolers have more experience taking the FCAT.

The additional test-taking experience can mitigate the effects of unsafe school environments. Since elementary students are less familiar with the format of the FCAT, they have to rely more on gained knowledge in order to pass the FCAT, which is expected to suffer more from unsafe environments than familiarity of the test format. 3.) The school climate survey may be an appropriate instrument for elementary students, but not middle school or high school students. 4.) Middle schools and high schools have more student subpopulations than elementary schools. It is possible that the school climate survey results from middle schools and high schools are not reflective of some student subpopulations. A remedy would be to increase the sample size of participants, especially since middle schools and high schools on average have larger student populations than elementary schools.

Limitations

A number of limitations must be considered in assessing the generalizability and the validity of the results of this study. The student response rate on the Miami-Dade Public Schools School climate survey was 82 percent for the 2007-2008 and 2008-2009 school years and 87 percent for the 2009-2010 school years for the whole district. The response rate for individual schools varied. If the response rate for a school was too low, the district did not report the results for that school, and therefore, such schools were automatically excluded from analysis. Without data on the schools that did not have results or data on the students that did not respond, it is impossible to assess if these excluded schools and students differed in significant ways from the schools that had data and students that did respond. If the non-response group had perceptions of school safety that differed significantly from the response group, the estimates derived in this study may not be representative of all public schools and students who attend public schools in the Miami-Dade Public School district.

Since the Miami-Dade Public School district does not report the results of individual student school climate surveys, but only gives school-wide results, it is impossible to assess demographic differences within a school in regards to how each demographic group responded. Data on individual students would have allowed this study to potentially introduce important individual-level data. Such data would have allowed this study to analyze student subpopulations within each school.

The exclusion of data on the neighborhood surroundings of each school may make the estimates on the effects of school safety on school achievement less precise. It is possible that neighborhood surroundings can influence both school achievement and perceptions of school safety. Neighborhood surroundings that are perceived as being not safe may negatively impact academic achievement and perceptions of school safety. Conversely, if students perceive a school to be safer than the surrounding neighborhood, then students may perceive a school to be a safe haven and be more likely to agree that their school is safe. Since important data like poverty is not available beyond a geographical area smaller than a census tract and is also not available on an annual basis, factors related to neighborhood surroundings could not be included in this study.

The percent of teachers that were newly hired does not represent the full spectrum of teaching experience. In addition, experience between newly hired teachers is also going to vary since some newly hired teachers may have had prior teaching experience. This variable only represented a fraction of a school's level of teaching experience.

This study also did not take into account school-level factors that may have significant impact on academic achievement like the presence and the effectiveness of tutoring and remedial services. The exclusion of such factors may make the estimates derived from this study less reliable.

Since the school district utilized in this study is majority Hispanic, the results of these studies may not be generalizable to other school districts in the country. Achievement on FCAT scores does not fully represent academic achievement. In addition, the effects of school safety on standardized test scores in this study may not be generalizable to other geographical regions whose standardized tests differ significantly from the FCAT.

References

Bosworth, K., Ford, L., & Hernandez, D. (2011). School Climate Factors Contributing to Student and Faculty Perceptions of Safety in Select Arizona Schools. *Journal of school health*, *81*(4), 194-201.

Bowen, N. K., & Bowen, G. L. (1999). Effects of crime and violence in neighborhoods and schools on the school behavior and performance of adolescents. *Journal of Adolescent Research*, *14*(3), 319-342.

Bowen, G. L., Bowen, N. K., & Richman, J. M. (2000). School size and middle school students' perceptions of the school environment. *Children & Schools*, *22*(2), 69-82.

Boyd, D. J., Lankford, H., Loeb, S., Rockoff, J.E., & Wyckoff, J.H. (2008). The narrowing gap in New York City teacher qualifications and its implications for student achievement in high-poverty schools. *Journal of Policy Analysis and Management 27(4)*: 793–818.

Clark, T. S., & Linzer, D. A. (2012). Should I use fixed or random effects. *Unpublished paper*, *25*.

Collier, V. P., & Thomas, W. P. (2004). The astounding effectiveness of dual language education for all. *NABE Journal of Research and practice*, *2*(1), 1-20.

Cotton, K. (1996). School size, school climate, and student performance.

Golash-Boza, T. (2005). Assessing the Advantages of Bilingualism for the Children of Immigrants1. *International Migration Review*, *39*(3), 721-753.

Gronna, S. S., & Chin-Chance, S. A. (1999). Effects of School Safety and School Characteristics on Grade 8 Achievement: A Multilevel Analysis.

Hao, L., & Bonstead-Bruns, M. (1998). Parent-child differences in educational expectations and the academic achievement of immigrant and native students. *Sociology of Education*, 175-198.

Kitsantas, A., Ware, H. W., & Martinez-Arias, R. (2004). Students' perceptions of school safety: Effects by community, school environment, and substance use variables. *The Journal of Early Adolescence*, *24*(4), 412-430.

Laub, J. H., & Lauritsen, J. L. (1998). The interdependence of school violence with neighborhood and family conditions. *Violence in American schools: A new perspective*, 127-155.

Lee, V. E., & Smith, J. B. (1997). High school size: Which works best and for whom?. *Educational Evaluation and Policy Analysis*, *19*(3), 205-227.

Milam, A. J., Furr-Holden, C. D. M., & Leaf, P. J. (2010). Perceived school and neighborhood safety, neighborhood violence and academic achievement in urban school children. *The Urban Review*, *42*(5), 458-467.

Portes, A., & Schauffler, R. (1994). Language and the second generation: Bilingualism yesterday and today. *International migration review*, 640-661.

Rice, J. K. (2010). The impact of teacher experience examining the evidence and policy implications.

Sass, T.R., Hannaway, J., Xu, Z., Figlio, D.N., & Feng, L. (2010). Value added of teachers in high-poverty schools and lower-poverty schools. *Journal of Urban Economics 72(2–3)*: 104–22.

Schreck, C. J., & Miller, J. M. (2003). Sources of fear of crime at school: What is the relative contribution of disorder, individual characteristics, and school security?. *Journal of School Violence*, *2*(4), 57-79.