Are Environmental Factors Impacting Middle School Students’ Testing Ability

Dr. Linda Hopson, Associate Professor, School of Education
Dr. Tony E. Graham, Associate Professor, School of Technology
Dr. Vereda King, Chair, Associate Professor, School of Business
Background

Charlotte Mecklenburg Schools

- Strategic Plan 2018: For a Better Tomorrow
- Strategic planning is the process of identifying the desired outcome and the necessary steps to achieve a goal. Strategic planning is critical in education because it requires the evaluation and implementation.
Purpose

- Charlotte Mecklenburg Schools (CMS) created a strategic plan in 2013 which outlined a five year plan to restructure the schools by 2018.
- Strategic planning requires conducting a needs assessment by examining the current state of a school and/or district then creating plans that identifies methods to achieve the goal in a specified amount of time. Strategic planning requires change in order to create the future envisioned for CMS.
Six Goals Identified

- *Strategic Plan 2018: For a Better Tomorrow* was designed with six goals to redesign schools and transforms student lives within the school district.

- CMS promised to “provide a personalized environment of academic excellence that prepares every child, every day for a better tomorrow” (CMS, 2013). The strategic plan identified six goals which are designed to transform schools in the learning communities which are necessary to prepare students for the future. The six goals include:
Goals

- “Maximize academic achievement in a personalized 21\textsuperscript{st} century learning environment for every child to graduate college and career ready.
- Recruit, develop, retain and reward a premier workforce.
- **Cultivate partnerships with families, businesses, faith-based groups and community organizations to provide a sustainable system of support and care for each child.**
- **Promote a system-wide culture of safety, high engagement, cultural competency and customer service.**
Goals Continued….

- Optimize district performance and accountability by strengthening data use, processes and systems.
- Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign.” (CMS, 2013)
Research

- Concentrates on the external environment particularly violence in the neighborhood and how it may affect the overall performance of students especially as it relates to test scores.

RESEARCH QUESTION:

- Are middle school students testing abilities affected by the location of the school?

OBJECTIVE STATEMENT:

- To determine if students testing abilities are affected by the location of the school.

TARGET AUDIENCE:

- Parents who have children attending middle school in Mecklenburg County.
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ABSTRACT

- This study examines criminal data and EOG test scores of nine middle schools in Mecklenburg County.
- The schools were chosen based on location and the amount of criminal activity which occurred between August 25, 2014 and June 10, 2015.
- The schools are divided into two groups.
  - The first group are schools that have a high crime rate in its location.
  - The second group of schools that did not have criminal activity around them.
- The study uses GIS to map the schools as well as a description of what crimes took place within a mile radius around each targeted school.
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ABSTRACT (cont.)

- The type of crime data captured consists of burglary, theft, drugs and vandalism.
- The study will display the select EOG test scores in a bar graph for the 2014-2015 academic year.
- All test results will originate from test ranking website known as www.schooldigger.com
- The research will try to determine if a stable or disruptive school environment effect student testing abilities.
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BACKGROUND

- According to the U.S. Department of Education, a higher rate of violent incidents were higher in middle schools than in primary or high schools alone (Neiman, 2011).
- Each year, roughly 3 million young people would fall victim to criminal activities. Violent acts as well as criminal activities are a serious offense and should not be taken lightly. In approximately two academic school years, a sum of 85 adolescents died violently while attending school. Out of the 85 students, approximately 75% of the incidents involved using firearms. Adolescents who attend middle school are more likely to take part or become the victim of violent acts. The reason being, early adolescence is a difficult age, and students come into contact with other students with different backgrounds (Costly, 2015).
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BACKGROUND, (cont.)

- Under the circumstances of these violent acts, middle school students are more than twice than likely to be affected by school violence, than high school students (Costly, 2015).
- According to the National Center for Education Statistics, arrests for drug law violations increased by 76 percent during 2012.
- Intermediate school children carry out more devastating and violent acts than high school students (U.S. Dept. of Justice., 2012).
- According to the Constitutional Rights Foundation, students who attend middle school are more likely to be affected by any form of school violence.
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BACKGROUND, (cont)

- In spite of these statistics, one of the strongest factors that contributes to schools misconduct/disorder of students is the location of the school, demographics, and population (Costly, 2015).
- Students who are exposed to a harmful environment may fall victim to becoming afraid, which will affect their engagement and success in certain criteria’s (Wagner, 2012).
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INTRODUCTION

- Education is a valuable tool, which is used to shape the minds of many people. Institutions utilize this valuable tool to help build our nation’s future generation. In spite of this, adolescents who are exposed to violence can experience fear and disorder. As a result, these violent acts will affect their engagement and success in their academics (Wagner, 2012).

- Adolescents who attend junior high school are more likely to take part or be the victim of criminal activities. The reason being is because students lack proper knowledge of social behavior when it involves decision making (Costly, 2015).
METHODOLOGY

- Criminal records were obtained from a crime mapping website (www.raidsonline.com)
- Data was geocoded using ArcGIS Online
- Shapefiles of Mecklenburg County middle schools were retrieved from the Mecklenburg County GIS Department
- The shape files were applied to the map to represent the regional area of Mecklenburg County as well as the school districts.
- Geocoded addresses of crime data were exported into layers
BUFFERS were used to examine which criminal activities took place within a 1 mile radius of the target schools.

BAR graphs were created from the data in ArcMap.

GIS was used to analyze results.
According to www.schooldigger.com, Alexander Middle received low test scores for their 2014-2015 academic year. The institution's highest test score for all three grades was a 53.6% and below for their mathematics. However, their highest test score average for reading was a 60.3% and below.
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RESULTS – Schools with Crime - Alexander Middle

**Alexander Middle EOG Test Scores**
http://www.schooldigger.com/go/NC/schools/0297001189/school.aspx
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RESULTS - Frances Bradley Middle

- According to www.schooldigger.com, Frances Bradley Middle’s highest standard test score in all three grades for mathematics was a 75% and below.
- However, test scores for the reading portion of the EOG’s were lower. Bradley Middle received a 69.9% and below.
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RESULTS – Schools with Crime - Frances Bradley Middle

Bradley Middle EOG Test Score
http://www.schooldigger.com/go/NC/schools/0297002395/school.aspx
In spite of its location, Crestdale Middle performed at a satisfying level. Test results shows that the highest standard grade for all three grades was a 79.9% and below in mathematics.

In addition to this, Crestdale received a high score of 78% and below for the reading portion.
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RESULTS – Schools with Crime - Crestdale Middle

Crestdale Middle EOG Test Score
http://www.schooldigger.com/go/NC/schools/0297002394/school.aspx
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RESULTS - Mint Hill Middle

- Mint Hill Middle’s highest standard test score in all 3 grades for mathematics was a 72.70% and below.

- However, test scores for the reading portion of the EOG’s were lower.
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RESULTS – Schools with Crime - Mint Hill Middle

[Graph showing EOG Test Scores for different grades and subjects at Mint Hill Middle School]

http://www.schooldigger.com/go/NC/schools/0297002577/school.aspx
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RESULTS - Bradley Middle

- Bradley Middle received a 69% and below. Bailey Middle perform quite well. Bailey Middle’s highest standard test score in all three grades for mathematics was an 81.2% and below.

- However, test scores for the reading portion of the EOG’s were average. Bailey Middle received a 78.3% and below.
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RESULTS – Schools with Crime - Bradley Middle

![Bar Chart and Map](http://www.schooldigger.com/go/NC/schools/0297002870/school.aspx)
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RESULTS – Schools with No Crime - Community House Middle

- Community House Middle received a high score of 86.8% and below for grades 6-8 in mathematics.

- In addition to this, test scores revealed that they scored an 86.1% and below for the reading portion.
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RESULTS – Schools with No Crime - Community House Middle

Community House Middle EOG Test Score
http://www.schooldigger.com/go/NC/schools/0297002783/school.aspx
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RESULTS – Schools with No Crime - Jay M. Robinson Middle

- Jay M. Robinson’s test scores shows a high score of 90.3% and below in mathematics for grades 6-8.

- Test scores for reading shows that all three grades scored between 80%-90% with their highest score being 90.7%.
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RESULTS – Schools with No Crime - Jay M. Robinson Middle
Are Environmental Factors Impacting Middle School Students’ Testing Ability

RESULTS – Schools with No Crime - Alexander Graham Middle

- In spite of all middle schools performing well, Alexander Graham did not show promising results.

- Their highest test score for all three grades was a 57.3% and below in mathematics.

- Furthermore, the schools highest test scores for reading was 73% and below.
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RESULTS – Schools with No Crime - Alexander Graham Middle

![Bar chart showing EOG test scores for Alexander Graham Middle School.](http://www.schooldigger.com/go/nc/schools/0297001188/school.aspx)
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RESULTS – Schools with No Crime - Piedmont Middle

- In spite of all middle schools performing well, Piedmont received an average test result.

- Their highest test score for all three grades was a 79.4% and below in mathematics.

- Furthermore, the schools highest test scores for reading was 86.10%.
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RESULTS – Schools with No Crime - Piedmont Middle

Piedmont Open Middle EOG Test Scores
http://www.schooldigger.com/go/NC/schools/0297001259/school.aspx
CONCLUSION

- Data suggests active crime rates could affect student’s ability to learn and perform well on tests.
- However, several middle school EOG student scores, with a high amount of crime in the area, appear to perform well.
- The same data suggests middle schools located in an area with no form of crime performed poorly on their tests.
- This study suggests that middle schools average test scores are not necessarily affected by criminal activity or lack thereof.
Environmental Impacts on Students Testing Ability

Research Question

Are middle school students testing abilities affected by the location of the school?

Objective Statement

To determine if students testing abilities are affected by the location of the school.

Target Audience

Parents who have children attending middle school in Mecklenburg County.

Hypothesis

Research claims that students exposed to any form of violence will affect their engagement & success in school.

Abstract

Project examines nine middle schools in Mecklenburg County. The schools will be chosen based off the amount of crime occurred between August 25, 2014-June 10, 2015 and test scores. The project will display a map with the location of the schools and a description of what crimes took place within a mile radius. The project will display EOG test scores for each school. As a result, each school will be evaluated and compared to each other.

Background Information

According to the U.S. Department of Education, a higher rate of violent incidents were higher in middle schools than in primary or high schools alone. Violent acts as well as criminal activities are a serious offense and should not be taken lightly. Adolescents who attend middle school are more likely to take part or become the victim of violent acts. According to the Constitutional Rights Foundation, students who attend middle school are more likely to be affected by any form of school violence. Students who are exposed to a harmful environment may fall victim to becoming afraid, which will affect their engagement and success.

Introduction

Education is a valuable tool, which is used to shape the minds of many people. Institutions utilize this valuable tool to help build our nation’s future generation. In spite of this, adolescents who are exposed to violence can experience fear and disorder. As a result, these violent acts will affect their engagement and success in their academics. In regards to these violent acts, if we’re unable to resolve these issues when they first appear, then it will surely affect the students in their future academics.

Methodology

Data the represents crime was obtained from a crime mapping website. After obtaining the files, the data was geocoded into a map, using ArcGIS Online. Shapefiles of Mecklenburg County and a list of middle schools were obtained from the Mecklenburg County GIS Department. After exporting the ArcGIS map into ArcMap, the shapefiles were applied to represent regional areas of Mecklenburg County and the school locations. Buffers were applied to examine what crime took place within a 1 mile radius of the school. Bar were applied to the layout by creating them through ArcMap.

Results

The research illustrates that middle schools located within a mile radius of crime have below to standard test scores. According to school digger.com, Alexander Middle received low test scores for their 2014-2015 academic year. The institutions highest test score for all 3 grades was was a 53.6% and below for their mathematics. However, their highest test score average for reading was a 60.3% and below. Frances Bradley Middle’s highest standard test score in all 3 grades for mathematics was a 75% and below. However, test scores for the reading portion of the EOC’s were lower. Bradley Middle received a 69.9% and below. In spite of its location, Crestdale Middle performed at a satisfactory level. Test results shows that the highest standard grade for all 3 grades was a 79.9% and below in mathematics. In addition to this, Crestdale received a high score of 78% and below for the reading portion. Middle schools that experience no form of crime performed well on their tests.

Conclusion

Data suggests active crime rates affect student’s ability to learn and perform well on tests. However, several middle schools appear to perform well with a high amount of crime in the area at certain middle schools. The same data suggests middle schools located in an area with no form of crime performed poorly on their tests.

Future Research

This study may be used to research student academic performance of children who are attending school in locations with crime. The study can also be used to further evaluate if crime does play a role in effecting student’s ability to learn.
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Crestdale Middle

Bradley Middle

Alexander Middle

Crestdale Middle EOG Test Score
http://www.schooldigizer.com/go/NC/schools/0297002394/school.aspx

Bradley Middle EOG Test Score
http://www.schooldigizer.com/go/NC/schools/0297002395/school.aspx

Alexander Middle EOG Test Scores
http://www.schooldigizer.com/go/NC/schools/0297001189/school.aspx

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Community House Middle

Jay M. Robinson Middle

Alexander Graham

Community House Middle EOG Test Score
http://www.schooldiglger.com/go/NC/schools/0297002789/school.aspx

Jay M. Robinson EOG Test Scores
http://www.schooldiglger.com/go/NC/schools/0297001639/school.aspx

Alexander Graham EOG Test Scores
http://www.schooldiglger.com/go/NC/schools/0297001188/school.aspx

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Mint Hill

Bailey Middle

Piedmont Middle

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THANK YOU!

Q and A’s