

**Choosing Integration:**  
**The Significance of Academic Performance in Suburban Families**  
**Choosing a Hartford Magnet School**

David MacDonald

April 26, 2006

Public Policy 806: Methods of Research

Professor James Hughes

Trinity College, Hartford CT

**Choosing Integration:  
The Significance of Academic Performance in  
Suburban Families Choosing a Hartford Magnet School**

David MacDonald

**Abstract**

Many educational policy leaders in Connecticut have focused on magnet schools as one of the primary remedies in the Sheff vs. O’Neill Court case. The purpose of magnet schools is to reduce racial and socio-economic isolation and provide an equal educational opportunity for all of Connecticut’s children. The Connecticut Supreme Court found that de facto segregation exists in Connecticut and that this violates the state constitution. Research has shown the importance of socio-economic integration as a strategy to improve educational outcomes of low-income children (Coleman-1966; Gamaron-1996; Goldhaber-1999; Mickelson-1999; Orfield and Lee-2005). Evidence so far indicates that magnet schools are reducing segregation, improving test scores of low-income children and reducing the achievement gap. This is occurring through school choice, theme-based curriculums and pedagogies, and small schools. If magnet schools are going to be a successful strategy, they need to compete with suburban schools and attract enough suburban families to apply. Given Hartford’s reputation for low-performing schools, how significant a factor are CMT scores for suburban families when choosing a magnet school.

## Introduction

On July 9, 1996, the Connecticut Supreme Court issued its ruling in the *Sheff vs. O'Neill* case that the state of Connecticut was responsible for de facto segregation in the state's schools and that the existing educational system was in violation of Connecticut's constitution. The majority found that the state has an affirmative constitutional obligation to provide a substantially equal educational opportunity to all students regardless of race or ethnicity. Many educational policy leaders in Connecticut have focused on magnet schools as one of the primary remedies in the *Sheff vs. O'Neill* Court case because it is a voluntary approach to increase the numbers of Hartford children attending integrated schools. In addition, the advent of the federal No Child Left Behind Act has increased the urgency of reducing the achievement gap between white students and minority students. Preliminary evidence indicates that magnet schools increase minority achievement and reduce the achievement gap. The *Sheff vs. O'Neill* court case and federal education policy have placed increased pressure on the operators of magnet schools to achieve both policy objectives. However, since families (both urban and suburban) choose to apply to magnet schools, their success is dependent upon attracting suburban families. This paper will investigate the relationship between student test scores, the number of suburban students, and the number of applications from suburban families at magnet schools in Hartford in order to identify whether or not suburban parents are using Connecticut Mastery Test scores as a criteria for which schools they apply to.

The purpose of magnet schools is to reduce racial and socio-economic isolation and provide an equal educational opportunity for all of Connecticut's children. This purpose implies the objectives of raising minority student achievement and closing the achievement gap between white and minority students. There have been many studies of the effects of integration and segregation on black student achievement and many of them show that this is actually a reflection of the effects

of poverty on student achievement. Black achievement is positively correlated with the percent of white students in the school because peer influences are the second most important factor in student achievement (Coleman, 1966). Segregation among schools and racially identifiable tracking in schools had negative effects on academic outcomes, while desegregated learning environments benefited the academic performance of black students (Mickelson, 1999). Studies of the St. Louis magnet schools concluded that black students in magnet schools or in white suburban high schools had better achievement than those in assigned schools (Orfield, 1997). More recently low-income minority students in Wake County (Raleigh), North Carolina, who attended socio-economically integrated schools made significant gains (Boger, 2005). The research suggests there are two main reasons for these effects: High poverty schools tend to have a less stable and less qualified teaching staff, and student achievement and aspirations are connected to peer influences (Orfield and Lee, 2005).

Research has shown the importance of socio-economic integration as a strategy to improve educational outcomes of low-income children. Another factor appears to be family and staff empowerment through school choice. Magnet schools are schools of choice that serve to give more control of educational decisions to parents who in turn will choose better schools for their children. They are schools of choice for teachers which may attract better teachers through recruitment, and who have a more personal stake in the success of the school. Furthermore they provide unique curricular options that, along with the act of choosing, may empower and engage students, teachers, and parents in a more efficient co-production of educational outcomes. Magnet schools were found to be more effective than regular schools at raising the proficiency of students in science, reading and social studies (Gamaron, 1996). The school environment and the fact that they are schools of choice were found to lead to increases in minority student achievement (Goldhaber, 1999). More

study is needed here, but there is some evidence that school choice is another factor that is improving the educational outcomes of low-income minority students.

Given the history of the Hartford region and of the Sheff vs. O'Neill case, it is very unlikely that the courts will force all schools to integrate. We also know from the research that socio-economic integration is the most promising strategy for improving minority student educational outcomes and closing the achievement gap. Therefore, in order for voluntary desegregation to be successful, it is important to understand how suburban parents decide to choose a magnet school. Numerous surveys have shown that academic quality and school climate are the most important factors to parents when choosing a school and those parents choosing magnet schools are already supportive of integration and are interested in distinctive curricular options (Maddaus, 1990). There is also evidence that parents distinguish between schools of varying quality and respond positively to school quality by sending their children to schools they believe will improve their child's achievement (Goldhaber, 1999). Therefore, one should expect the magnet schools with the better academic quality and school climate to attract more suburban applicants, and those schools with larger percentage of suburban (i.e. middle income) children will have better test scores.

This paper will review the Connecticut Mastery Test score data of Hartford based magnet schools for the last two years and cross-reference it with data collected from Hartford Public Schools and the Capital Region Education Council (both operate magnet schools located in Hartford) on the number of suburban families applying to attend each magnet school. This paper will look at the key factors about each magnet school (test scores, socio-economic make up, curriculum/pedagogy, school facility, and location) and attempt to correlate these factors why suburban families choose the magnet schools they did. If magnet schools are going to be a successful strategy, they need to compete with suburban schools and attract enough suburban

families to apply. Given Hartford's reputation for low-performing schools, how significant a factor are CMT scores for suburban families when choosing a magnet school?

## Methods

There are 18 magnet schools in Hartford and surrounding towns. It is assumed that suburban parents would not have the same reluctance to choose a magnet school located in a suburban town as they might with one located in Hartford, due to Hartford's reputation of poor performing schools. Also, Hartford-based magnet schools tend to be less integrated than the suburban ones. Hartford-based magnet schools are made up of between 20 and 50 percent suburban students, with the balance from Hartford, while students at suburban magnets are usually 50 percent or more suburban. Therefore, in order to accurately measure the effect that test scores has on parental choice, reviewing the ten magnet schools located in Hartford.

Some of the magnet schools were too new to have any test data available. Others only had test data from one year due to their grade configurations and thus would not have enough data to show the impact integrated educational setting have on student achievement. The most complete data existed for the 4<sup>th</sup> Grade and 6<sup>th</sup> Grade CMT scores of five magnet schools located in Hartford (Breakthrough, Fisher, Montessori, Simpson-Waverly, and Webster) and these were the schools used for this study. The CMT test scores from 2003 and 2004 were averaged together to even out the results and provide a more accurate reflection of the test scores of more of the students at the school. The percentage of students who were low-income (eligible for free or reduce-priced lunch) and the percentage of students from suburban communities were also examined to see if the data correlated with what the literature has suggested. Additionally, test score data on the percentage of low-income students at each school was also examined, when available, to try and determine if the

test scores of the magnet schools were reflective of better academic performance of the low-income students as well.

Other less important factors that influence parental choice (Maddaus, 1996) are location of the school and the facility. The quality of the facility and the neighborhood location were examined to try to control for these factors as influences on suburban application rates. Since five schools were examined, it was not possible to control for these factors.

To determine the acceptance rate at each magnet school, the number of applications to each Hartford-based magnet school and the number of available seats for suburban children was compiled. The acceptance rate was determined by dividing the number of suburban seats by the number of suburban applications for each school. Suburban “seats” are set-aside for suburban families and when there are more applicants than available seats they are chosen through a random lottery process. It is assumed that the lower the acceptance rate, the more popular that choice of school is for suburban families, whereas the higher the acceptance, the less popular it is.

Two hypotheses were tested:

1. More integrated schools (those with a higher percentage of suburban students) will have higher CMT scores, and
2. Schools with higher CMT scores will have a lower acceptance rate for suburban children. (A higher number of applications compared to the number of seats available).

## **Data and Findings**

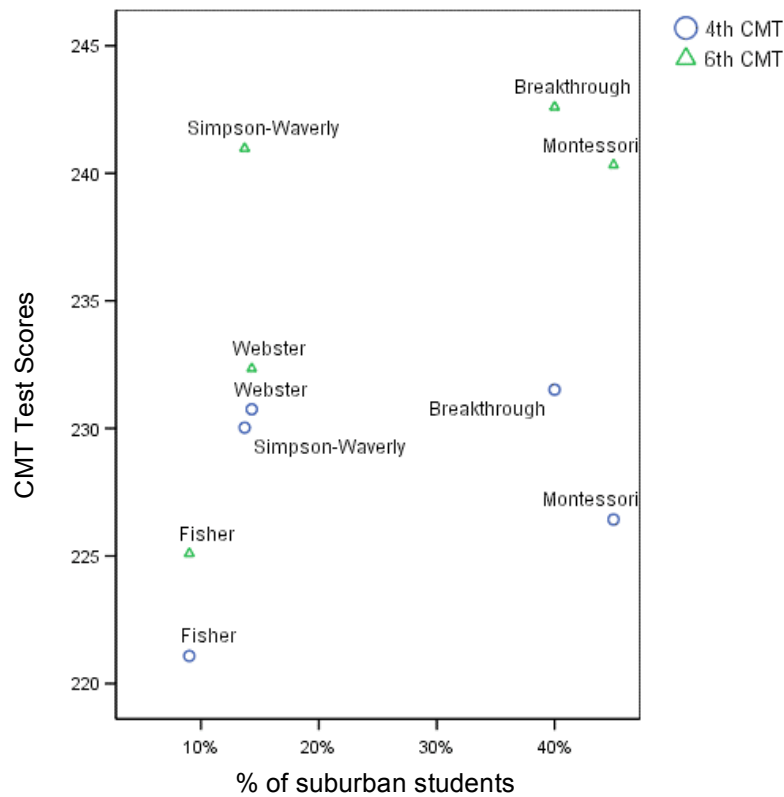
The data presented in Table 1 (below) shows that the schools with the greater percentage of suburban students have higher test scores. Also, those schools with the lower percentage of low-income students (those qualifying for the free or reduce-priced lunch) tended to have higher test

scores. The data was placed on a scatter plot diagram and the correlation coefficient was calculated for this data.

**Table 1**

	Average 4th Grade Score	Average 6th Grade Score	% suburban students 05-06	% Free/Red. Lunch 05-06
Montessori (PreK-6)	226.43	240.33	45.00	27.20
Fisher (PreK-6)	221.08	225.10	9.00	53.20
Simpson-Waverly (PreK-6)	230.03	240.98	13.70	65.30
Breakthrough (PreK-8)	231.52	242.60	40.00	41.30
Webster (PreK-8)	230.75	232.35	14.30	55.70

**Figure 1: Comparing the percentage of suburban students to average CMT scores**



The scatter plot diagram shows a positive correlation between the percentage of suburban students and higher CMT scores. The correlation was stronger at the 6<sup>th</sup> grade level, which could be a reflection of low-income students requiring additional years of study to close the gap with their

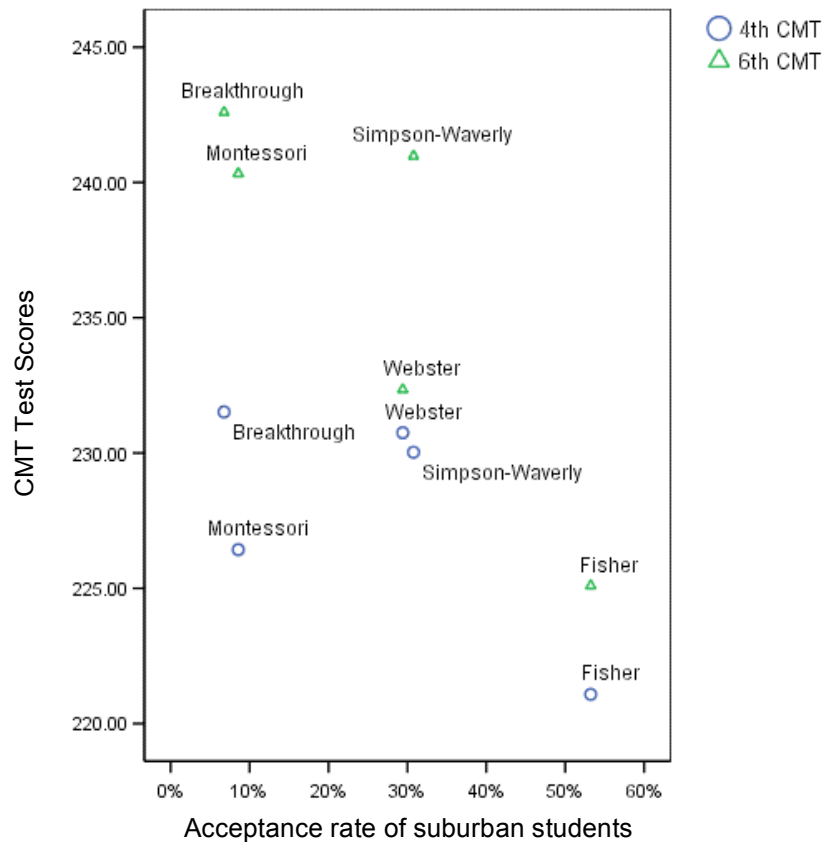
middle-income peers. The correlation of the percentage of suburban to 4<sup>th</sup> CMT scores was .27, and the correlation with 6<sup>th</sup> CMT scores was .58.

The data presented in Table 2 (below) shows that the schools with the lower suburban acceptance rate (ratio of available suburban seats to number of applications) have the higher CMT test scores. Figure 2 shows the data on a scatter plot diagram.

**Table 2**

	# suburban seats for 2006	# of suburban applications for 2006	Suburban Acceptance Rate	Location	Modern Facilities
Montessori (Prek-6)	21	245	0.09	Barry Sq.	Y
Fisher (PreK-6)	33	62	0.53	Blue Hills	N
Simpson-Waverly (PreK-6)	24	78	0.31	Northeast	N
Breakthrough (Prek-8)	20	296	0.07	Blue Hills	N
Webster (PreK-8)	30	102	0.29	West End	Y

**Figure 2: Comparing the suburban acceptance rate to the average CMT scores**



Higher CMT scores → a lower suburban acceptance rate [increased suburban demand] (Correlation of 4<sup>th</sup> CMTs to suburban acceptance rate is -.62, 6<sup>th</sup> CMTs is -.57) . The data appears to support both that

Other findings included:

Magnet schools outperformed other Hartford schools

Where data was available, it showed low-income students at magnet schools closed the gap with their middle class peers, and did significantly better than their peers in other Hartford schools.

Magnet schools closed half the gap with state averages

**Table 3**

Grade	Hartford	Magnet Schools	Low-income Magnet students	State
4th	210	226	220	249
6th	219	236	234	251

	Average 4th Grade Score	Average 6th Grade Score	% suburban students 05-06	% Free/Red. Lunch 05-06
Montessori (Prek-6)	226.43	240.33	45.00	27.20
Fisher (PreK-6)	221.08	225.10	9.00	53.20
Simpson-Waverly (PreK-6)	230.03	240.98	13.70	65.30
Breakthrough (Prek-8)	231.52	242.60	40.00	41.30
Webster (PreK-8)	230.75	232.35	14.30	55.70

## Discussion of the Findings

Summary

**Point 1**

**Point 2**

**Point 3****Conclusion**

The research suggests that race is actually a proxy for socio-economic status. While the Sheff vs. O'Neill court case is based on de facto racial segregation, the solution must focus on socio-economic integration.

Evidence so far indicates that magnet schools are reducing segregation, improving test scores of low-income children and reducing the achievement gap. This is occurring primarily through a mechanism of school choice with magnet schools offering unique curricular options and school environments with racial and socio-economic integration.

## Bibliography

Boger, C., *The socioeconomic composition of the public schools: A crucial consideration in student assignment policy*. Chapel Hill, NC: Center for Civil Rights, 2005.

Coleman, James S., et al., *Equality of Educational Opportunity*, National Center for Educational Statistics (DHEW/OE), Washington, DC, 1966.

Connecticut State Department of Education

Capital Region Education Council

Gamaron, Adam, "Student Achievement in Public Magnet, Public Comprehensive, and Private City High Schools," *Educational Evaluation and Policy Analysis*, Spring 1996, Vol. 18, No. 1, pp.1-18.

Goldhaber, Dan D., "School Choice: An Examination of the Empirical Evidence on Achievement, Parental Decision making and Equity," *Educational Researcher*, December 1999, pp. 16-24.

Hartford Public Schools

Maddaus, John, "Parental Choice of School: What Parents Think and Do," *Review of Research in Education*, Vol. 16 (1990), pp. 267-295.

Mickelson, Roslyn Arlin, "The Effects of Segregation on African American High School Seniors' Academic Achievement," *Journal of Negro Education*, Vol. 68, No. 4, Fall 1999, pp 566-584.

Orfield, Gary, "Does Desegregation Help Close the Gap?" *Journal of Negro Education*, Vol. 66, No. 3, Summer 1997, pp. 241-254.

Orfield, Gary and Chungmei Lee, "Why Segregation Matters: Poverty and Educational Inequality," *The Civil Rights Project*, Harvard University, January 2005.

Ryan, James, E., and Michael Heise, "The Political Economy of School Choice," *Yale Law Review*, Vol. III, No. 8, June 2002, pp. 2043-2136.