

PERFORMANCE OF CHARTER SCHOOLS IN MISSOURI*

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Abstract

Since the passage of the first Charter School Law in Minnesota in 2001, there have been many studies that have examined the effect of Charter schools on student achievement with very mixed results. The Missouri legislature passed legislation in 1998 permitting the establishment of charter schools in a metropolitan school district or in an urban school district containing a city with a population greater than 350,000 inhabitants. In effect this limited the charters to St. Louis and Kansas City. This article provides a comparison of the student achievement of seventh and eighth grade students in communication arts and mathematics in Missouri charter schools with the achievement of seventh and eighth grade students in regular public schools in St. Louis and Kansas City, as measured by the statewide assessment.



NOTE: This module has been peer-reviewed, accepted, and sanctioned by the National Council of Professors of Educational Administration (NCPEA) as a scholarly contribution to the knowledge base in educational administration.

The focus on the need for drastic change in the current educational systems in the United States is one of many factors that have resulted in the creation of charter schools. Although the definition of a charter school remains somewhat elusive, charter schools have been defined as laboratories for school improvement; created to influence public schools by trying out innovations that, if deemed successful, could be replicated in the public school setting (Andrews & Rothman, 2002). Yet, others view charter schools as alternatives for parents who find private and parochial schools out of their financial reach.

The United States Department of Education defines charter schools as follows:

Charter schools are public schools, but what sets them apart is their charter - - a contract with a state or local agency that provides them with public funds for a specified time period. The charter states the terms

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under which the school can be held accountable for improving student performance and achieving goals set out in the charter. This contract frees charter developers from a number of regulations that otherwise apply to public schools. (Berman, 1998, p.1)

Since the passing of the first charter school law, by the state of Minnesota in 1991, there has been phenomenal growth in the movement. By June of 1998, 33 states and the District of Columbia had passed charter school legislation. Missouri was the 34th state to authorize the creation of charter schools. According to the Center for Education Reform (2005), 434 new charter schools were opened in the 2005-06 school year, a 13% increase over the previous year. A total of 3,625 charter schools serve 1,076,964 students in 41 states. For the 2006-07 school year, 90 additional charter schools have been approved to open.

The Missouri Charter Schools Act

Charter school legislation in Missouri was passed to address the failure of urban school districts. The State of Missouri paid a total of nearly \$2,000,000,000 to the Kansas City School District, under a 1996 desegregation agreement, to improve student achievement and bring about desegregation in the school population. The St. Louis City Public Schools were also targeted for the same reasons and received similar funding during the 1970s, 80s, and 90s (O'Conner & White, 1999). Over \$3,000,000,000 in funding could not help the Kansas City or St. Louis School Districts retain accreditation during this time period. Dissatisfaction with these outcomes resulted in the passage of the Missouri charter school legislation (Niedowski, 1998).

The Missouri legislature passed legislation in 1998 permitting the establishment of charter schools in a metropolitan school district or in an urban school district containing a city with a population greater than 350,000 inhabitants. The following were allowed to sponsor charter schools under this legislation: the school boards of Kansas City and St. Louis City Schools; a public four-year college or university with an approved teacher education program that meets regional or national standards of accreditation; or a community college located in Kansas City or St. Louis. Effective July 1, 2006, a private four-year college or university in a city not within a county with an enrollment of at least 1,000 students and with an approved teacher education program became eligible to sponsor a charter school.

Charter schools in Missouri are independent public schools located in the school districts of St. Louis and Kansas City. The number of charter schools in these school districts is unlimited. Charter schools operate under a contract, or charter. The contract describes the mission, vision, curriculum, personnel and budget of the school. Some charter schools focus on a particular academic approach or offer public education to at-risk students not well served by the existing district (Missouri Revised Statutes, 160.405). The application review process and the charter application are both considered "key to shaping the instruction and operation of charter schools" (Ascher & Greenberg, 2002, p. 513). They may not charge tuition and are free and open to all residents of St. Louis and Kansas City school districts or who are eligible to attend a district school under a voluntary desegregation program. Charter schools are required by law to accept and to meet the needs of special needs children and may not have admission requirements. Enrollment is limited only by capacity (Missouri Revised Statutes, 160.410).

The growth of Missouri charter schools expanded from the original 15 operating in the Kansas City School District during the initial authorization year (1999-2000) to 25 in the 2004-05 school year. However, that number has dropped to 22 in 2006-07, 16 in Kansas City and 6 in St. Louis. Casey, Anderson, Yelverton, and Wedeen (2002) compare the development and growth of charter schools to the stages of development of a new teacher. The phases consist of (a) survival and culture building (establishing practices and procedures to get through the first year), (b) focus on student learning and achievement, (c) commitment to effective curriculum design, and (d) reform efforts consistent with original vision.

Charter schools in Missouri were not required to adhere to many of the requirements mandated for public schools. The most important requirement eliminated was the supervision of charter schools by the Missouri Department of Elementary and Secondary Education. This oversight responsibility was assigned to the sponsor. (Missouri Revised Statutes, 160.400) Charter schools are held accountable for academic results.

Charter agreements in Missouri are typically five years in length with local sponsors. Charter applications that are denied by any sponsor may be submitted to the Missouri State Board of Education for appeal. Specific guidelines exist that limit the scope of appeals they may be considered and the state board's

rejection is subject to judicial review. If the state board approves the application, it will serve as the sponsor (Missouri Revised Statutes, 160.405). A recent example is a 2004 case in which the Westport Community Secondary Academy in Kansas City, which began operating in 1999-2000, was denied an extension of their charter by the sponsoring Kansas City School District. The State Board of Education rejected Westport's request to act as its sponsor (Guinther & Aull, 2004).

Problem and Purposes Overview

Although one of the major goals of the charter school movement was to improve student performance, the results have been mixed, according to numerous studies that have examined student achievement (Bulkley & Fisler, 2002). In a study by Hoxby (2004) she concluded that "over the United States as a whole, the charter school students are 4 to 5% more proficient in reading and 2 to 3% more proficient in mathematics than students in nearby regular public schools that the students would likely otherwise attend" (p. 13). However, in a report published by the Economic Policy Institute, Roy and Mishel (2005) identified different results than Hoxby. They reported that after controlling for racial composition among the major charter states only California reported a significant charter school advantage in reading proficiency. Additionally, they found that charter schools do not have any statistically significant edge over their matched traditional public schools for mathematics. A more recent study (Braun, Jenkins, & Grigg, 2006) resulted in similar results to Roy and Mishel. In utilizing the scores from the 2003 National Assessment of Educational Progress, Jenkins and Grigg found that fourth-graders in 6,764 traditional public schools scored an average of 5.2 points better in reading than students in 150 public charter schools and that traditional school students scored 5.8 points better in mathematics than students in the public charters.

Hill (2005) analyzed 41 studies that dealt with achievement in public charter schools. These studies were of varying degrees of sophistication, from using "data sets that are almost primitive" (p. 23) to more sophisticated approaches such as multivariate analysis, regression, and randomization. Hill found that even studies employing the more sophisticated methods "are about evenly divided between those finding positive results and those that are neutral, mixed, or negative" (p. 24). Hill went on to say:

It should also be noted that whether studies draw positive or negative conclusions about charter school effectiveness, the differences are not strong. This is so for two reasons. First, outcomes for many charter schools are virtually identical to the comparison groups. Second, although some charter schools have outstanding results, schools getting poor results statistically offset them. As with traditional public school results, averages conceal almost as much as they reveal. (p. 24)

Since the primary purpose of charter schools in Kansas City and St. Louis was to improve student achievement and since many of the charter schools have been in existence for five years or more, we were of the opinion that it was time to examine the student achievement in comparison to the public schools in both cities. The purpose of this study was to determine if there was a significant difference among the Missouri Assessment Program (MAP) index and scale scores of seventh and eighth grade students participating in charter schools in the Kansas City and St. Louis school districts and the MAP index and scale scores of seventh and eighth grade students not participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years. The MAP was developed as a performance based assessment system to measure student achievement. Since July 1, 1998, the Missouri State Board of Education used results from the MAP during the Missouri School Improvement Program process when classifying school districts for accreditation (Department of Elementary and Secondary Education, 2001). The study was conducted to determine if there was a relationship between a student's participation in a charter school and the student's MAP score in communication arts and mathematics. The MAP is the statewide test administered to selected grade levels in core subject areas on a statewide basis.

Research Hypotheses

To examine the charter schools in the Kansas City and St. Louis school districts and the effects of these schools on student achievement the following null hypotheses were tested:

1. There is no significant difference between the MAP communication arts index and scale scores of seventh grade students participating in charter schools in the Kansas City and St. Louis school districts and the MAP communication arts index and scale scores of seventh grade students not participating in

charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years.

2. There is no significant difference between MAP mathematics index and scale scores of eighth grade students participating in charter schools in the Kansas City and St. Louis school districts and the MAP mathematics index and scale scores of eighth grade students not participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years.

Methodology

Data Collection.

Building level MAP reports for Kansas City and St. Louis School Districts provided information on grade level MAP index and scale scores. It was assumed that the information contained in the MAP reports was collected and reported accurately by the Missouri Department of Elementary and Secondary Education.

Instrumentation.

The MAP examinations at the seventh and eighth grade were the instruments utilized to obtain data on the research population. Communication arts was tested in the seventh grade and mathematics in the eighth grade. The MAP examinations consisted of three parts. The three parts of the MAP were the constructed-response items, performance events, and the multiple-choice questions. Students received a combined MAP scale score in both communication arts and mathematics based on the performance on the three sections of the MAP. The MAP scale score was utilized to classify students into one of the five achievement levels of Advanced, Proficient, Nearing Proficient, Progressing, and Step 1 as established by the Missouri State Board of Education. MAP Index score is calculated with the following formula: Index Score = (percent of students scoring at Step 1*1)+(percent of students scoring at Progressing*1.5)+(percent of students scoring at Nearing Proficient*2)+(percent of students scoring at Proficient*2.5)+(percent of students scoring at Advanced*3).

Design of the Study.

This study used a quasi-experimental, non-equivalent group design using a posttest only analysis. A quasi-experimental design is similar to an experimental design but lacks the random assignment of groups found in true experimental research. Quasi-experimental designs have treatments, outcome measures and experimental units, but do not use random assignment to create the comparisons from which treatment-caused change is inferred. Instead, the comparisons depend on non-equivalent groups that differ from each other in many ways other than the presence of a treatment whose effects are being tested (Cook & Campbell, 1979).

An analysis of variance (ANOVA) was used to determine if the two groups of students, seventh and eighth grade students participating in charter schools in the Kansas City and St. Louis school districts and seventh and eighth grade students not participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years, had statistically different MAP index and scale scores. For this part of the study, an ANOVA was used to determine the relationship between the independent variable, participation of seventh and eighth grade students in charter schools in the Kansas City and St. Louis school districts, and the dependent variable of the students' MAP scores in communication arts and mathematics.

Findings

Null Hypothesis 1.

Null hypothesis 1 stated that there is no significant difference between MAP communication arts index and scale scores of seventh grade students participating in charter schools in the Kansas City and St. Louis school districts and the MAP communication arts index and scale scores of seventh grade students not participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years. The F statistic was utilized to compare the variation among the sample means with the variation of the means within the sample. Descriptive data on this sample are contained in Table 1.

Table 1

Descriptive data for MAP communication arts index and scale scores for seventh grade students not participating (NP) in charter schools in the Kansas City and St. Louis school districts and the MAP

communication arts index and scale scores of seventh grade students participating (P) in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower	Upper		
Index Score	NP	417	142.096	28.9422	1.4173	139.310	144.882	100.0	265.0
	P	108	137.410	21.3101	2.0506	133.345	141.475	104.0	212.5
	Total	525	141.132	27.5922	1.2042	138.766	143.498	100.0	265.0
Mean Scale Score	NP	417	648.818	25.0177	1.2251	646.410	651.226	551.5	741.9
	P	108	647.094	13.1237	1.2628	644.590	649.597	617.9	691.5
	Total	525	648.463	23.0769	1.0072	646.485	650.442	551.5	741.9
Median Scale Score	NP	417	651.070	25.4945	1.2485	648.615	653.524	539.0	743.5
	P	108	649.468	13.1865	1.2689	646.952	651.983	619.0	695.5
	Total	525	650.740	23.4932	1.0253	648.726	652.754	539.0	743.5

Note. N equals the number of schools with valid MAP Index and Scale scores. MAP Index score scale range is 100 to 300. Index Score = (percent of students scoring at Step 1*1)+(percent of students scoring at Progressing*1.5)+(percent of students scoring at Nearing Proficient*2)+(percent of students scoring at Proficient*2.5)+(percent of students scoring at Advanced*3) MAP scale score range is 100 to 900 points.

Table 1

In the data analysis for the effect of seventh grade student participation in the Kansas City and St. Louis District charter schools on their communication arts performance on the MAP, the resulting F statistic for Index score was not found to be significant between the two groups with $F(1, 523) = 2.481, p > .05$ (see Table 2). The resulting F statistic for Mean Scale score was not found to be significant between the two groups with $F(1, 523) = .479, p > .05$ (see Table 2). Additionally, the resulting F statistic for Median Scale score was not found to be significant between the two groups with $F(1, 523) = .398, p > .05$ (see Table 2). The F statistic provided a test for the statistical significance of the observed differences among the MAP Index and Scale Score means of charter school and non-charter school student groups. The F statistic value suggested that the difference between the sample means was due only to random fluctuations and the population means were not different (Iversen & Norpoth, 1987). This value significantly exceeded the proposed level of significance, which was set at the .05 level. The last column in Table 2 gives the probability of observing an F statistic as large as or larger than the one reported. In each case the significance statistic suggested that the probability was high that F statistic was equal to or larger than the observed value (Iversen & Norpoth). The observed probability was quite large and therefore suggested that there was nothing unusual about an F statistic of this magnitude (Iversen & Norpoth). This value significantly exceeded the proposed level of

significance, which was set at the .05 level. The F statistic revealed no significant difference between the groups and resulted in a failure to reject null hypotheses 1.

Table 2

Analysis of variance for MAP communication arts Index and Scale scores for or seventh grade students not participating in charter schools in the Kansas City and St. Louis school districts and the MAP communication arts index and scale scores of seventh grade students participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years.

		Sum of Squares	df	Mean Square	F	Sig.
Index Score	Between Groups	1883.461	1	1883.461	2.481	.116
	Within Groups	397053.922	523	759.185		
	Total	398937.382	524			
Mean Scale Score	Between Groups	255.100	1	255.100	.479	.489
	Within Groups	278797.041	523	533.073		
	Total	279052.140	524			
Median Scale Score	Between Groups	220.140	1	220.140	.398	.528
	Within Groups	288992.120	523	552.566		
	Total	289212.260	524			

Table 2

Null Hypothesis 2.

Null hypothesis 2 stated that there is no significant difference between MAP mathematics index and scale scores of eighth grade students participating in charter schools in the Kansas City and St. Louis school districts and the MAP mathematics index and scale scores of eighth grade students not participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years. The F statistic was utilized to compare the variation among the sample means with the variation of the means within the sample. Descriptive data on this sample are contained in Table 3.

Table 3

Descriptive data for MAP mathematics index and scale scores for eighth grade students not participating (NP) in charter schools in the Kansas City and St. Louis school districts and the MAP mathematics index and scale scores of eighth grade students participating (P) in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	Min	Max
<i>continued on next page</i>								

						Lower	Upper		
Index Score	NP	333	145.901	32.1231	1.7603	142.438	149.363	100.0	261.1
	P	94	137.046	21.7889	2.2474	132.583	141.509	104.9	215.6
	Total	427	143.951	30.3535	1.4689	141.064	146.839	100.0	261.1
Mean Scale Score	NP	333	659.783	69.2826	3.7967	652.315	667.252	.0	737.6
	P	94	663.037	17.0455	1.7581	659.546	666.528	623.6	706.3
	Total	427	660.500	61.6941	2.9856	654.631	666.368	.0	737.6
Median Scale Score	NP	330	668.015	29.3938	1.6181	664.832	671.198	541.0	737.0
	P	94	664.473	16.6464	1.7169	661.064	667.883	624.0	710.5
	Total	424	667.230	27.1125	1.3167	664.642	669.818	541.0	737.0

Note. N equals the number of schools with valid MAP Index and Scale scores. MAP Index score scale range is 100 to 300. Index Score = (percent of students scoring at Step 1*1)+(percent of students scoring at Progressing*1.5)+(percent of students scoring at Nearing Proficient*2)+(percent of students scoring at Proficient*2.5)+(percent of students scoring at Advanced*3) MAP scale score range is 100 to 900 points.

Table 3

In the data analysis for the effect of eighth grade student participation in the Kansas City and St. Louis District charter schools on their performance mathematics on the MAP the resulting F statistic for Index score was found to be significant between the two groups with $F(1, 425) = 6.316, p > .05$ (see Table 4). The F statistic value suggested that the difference between the sample means for the MAP Index was significantly different for students participating in charter schools from those students who did not participate in charter schools. Examination of the descriptive data contained in table 3 suggest that eighth graders participating in charter schools scored significantly lower than students not participating in charter schools. The resulting F statistic for Mean Scale score was not found to be significant between the two groups with $F(1, 425) = .204, p > .05$ (see Table 4). Additionally, the resulting F statistic for Median Scale score was not found to be significant between the two groups with $F(1, 523) = 1.249, p > .05$ (see Table 4). The F statistic value for Mean and Median Scale Scores suggested that the difference between the sample means was due only to random fluctuations and the population means were not different (Iversen & Norpoth, 1987). The last column in Table 4 gives the probability of observing an F statistic as large as or larger than the one reported. In the case for Index Score the significance statistic suggested that the probability was low that the F statistic was equal to or larger than the observed value (Iversen & Norpoth). In the cases of Mean and Median Scale Scores the probability was high that the F statistic was equal to or larger than the observed value (Iversen & Norpoth). These values significantly exceeded the proposed level of significance, which was set at the .05 level. The F statistic revealed a significant difference between the groups for Index scores and no significant difference between the groups for Mean and Median Scale Scores and resulted in a failure to reject null hypotheses 2.

Table 4

Analysis of variance for MAP mathematics Index and Scale scores for or eighth grade students not participating in charter schools in the Kansas City and St. Louis school districts and the MAP mathematics index and scale scores of eighth grade students participating in charter schools in the Kansas City and St. Louis school districts during the 2001 through 2005 school years.

		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	5747.874	1	5747.874	6.316	.012
	Within Groups	386741.413	425	909.980		
	Total	392489.287	426			
	Between Groups	776.234	1	776.234	.204	.652
	Within Groups	1620648.426	425	3813.290		
	Total	1621424.660	426			
	Between Groups	917.722	1	917.722	1.249	.264
	Within Groups	310024.608	422	734.655		
	Total	310942.330	423			

Table 4

Conclusions

National reports and public opinion have placed education reform on the American agenda, with the last two presidents of the twentieth century making educating the youth of the country a priority in their presidential campaigns (Martin & Crowell, 2000). Educational reform movements have focused attention on instructional delivery methods and the tools used to measure their effectiveness. Understanding instructional methods, student achievement, the factors that affect achievement, and effective measures of achievement are critical for meaningful educational reform.

This study focused on charter schools in the Kansas City and St. Louis School Districts and the effects of these schools on student achievement. For this study, an ANOVA was used to determine the relationship between the independent variable, participation of seventh and eighth grade students in charter schools, and the dependent variable of the students' MAP scale scores in communication arts and mathematics. The conclusion from the data analyses conducted during this study was that there appeared to be no relationship between a student's enrollments in charter schools during the 2001 through 2005 school years and achievement as measured by Missouri's Assessment Program. To date, the charter schools in Kansas City and St. Louis School Districts have not been able to fulfill their primary purpose to improve student achievement as compared to the achievement results of the traditional public schools in these two cities. These results are somewhat consistent with other research referred to earlier in this study.

One must look beyond using only test scores as the criteria for the success of charter schools. In a study of a charter middle school by Buchanan and Waddle (2004), the researchers found that student attendance was better than when the students were attending regular public schools. They also found that student attitudes about school and behavior had improved since coming to the charter school and the students had a sense of belonging. Interviews with parents indicated that parents were satisfied with the charter school and they were satisfied with the staff and the way they follow through on problems related to student learning, absences, and discipline. Parents and staff agreed that students received much more individual attention.

In summary, the data from this and other studies indicate that the results are somewhat inconclusive at this point in relation to student achievement, but it does appear that there is no significant improvement in student achievement over those students still in the regular public schools. However, the recent research does call for further study with more sophisticated methods (Hill, 2005) and the Buchanan and Waddle (2004) study does provide some evidence of benefits other than test scores.

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¹ <http://dese.mo.gov/stateboard/letters/2005/12272004.html>