A Comparison of Student Academic Growth between Indiana Charter Schools and Traditional Public Schools

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in Leadership of Learning

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EXECUTIVE SUMMARY

The purpose of this report is to answer several key questions about charter schools in Indiana, beginning with the foundational question:

How do charter school students differ from traditional public school students? Using data available from the Indiana Department of Education, it appears that, on the whole, charter school populations include more minority and low socioeconomic-status children than do traditional public schools in their home districts. Further, there is a difference in academic performance between students in traditional public schools and students in charter schools that predates their enrollment in the charter schools. Specifically, students enrolling in Indiana charter schools during the first year of the charter schools' operation display a lower level of prior academic achievement (36% passing both the Mathematics and Language Arts portion of Indiana Statewide Testing for Educational Progress [ISTEP]) than do their traditional public school peers (52%). This difference in academic performance between students in traditional public schools and the charter school students predates their enrollment in the charter schools. This initial disparity may account for the lower scores found for charter school students when compared to their traditional public school peers in scores on ISTEP.

Knowing the characteristics of the population of charter school students allows an examination of a second question:

What is the level of growth in student academic performance in charter schools versus traditional public schools, when controlling for gender, ethnicity, and, most important, initial level of student performance? Using data from the Northwest Evaluation Association Measures of Academic Progress (NWEA MAP) collected from all of Indiana's charter school students, we compared their academic growth to a carefully controlled sample of students from traditional Indiana public schools and found that in the three areas tested by MAP (Reading, Language Usage, and Mathematics) there was a consistent advantage for the students in charter schools. Charter students showed an average 1- to 1.5-point greater increase in MAP scores when compared to students in traditional public schools. In fact, the charter school students showed a 22% greater increase in Reading, an 18% greater increase in Math, and a 25% greater increase in Language Usage.

A final question assesses relative costs and benefits of charter schools versus traditional public schools:

How do charter schools and traditional public schools compare in the costs associated with student achievement? To answer this question we compared the average cost per student for one unit of academic growth on the MAP test in charter schools versus the average cost per student for the same level of academic growth in traditional public schools. Using the demographic information from the charter schools' home districts, we chose a set of matching school districts in Indiana and calculated the cost per pupil for one increment of growth on the MAP test for the charter schools and for the comparable school districts. This "growth per dollar" estimate revealed that each point increase on the MAP test cost approximately $1,311 for the charter schools and $2,028 for the traditional public schools.

The results of this study suggest that although Indiana charter school students have consistently shown lower ISTEP scores than their traditional public school counterparts, when the appropriate comparison groups are used, Indiana charter school students show more academic growth than a control group of students in traditional public schools who were matched for crucial demographic characteristics and initial academic ability. Further, this growth appears to be accomplished at a lower cost per student in the charter schools when compared to school districts matched for free/reduced lunch, percentage of minority students, and annual expenditures per student.

A COMPARISON OF STUDENT ACADEMIC GROWTH BETWEEN INDIANA CHARTER SCHOOLS AND TRADITIONAL PUBLIC SCHOOLS

On April 19, 2001, the Indiana General Assembly passed a bill authorizing the creation of charter schools, and by 2002, 11 charter schools had opened in the state. The number of charter schools in Indiana has been growing steadily since then; at present, there are 49 (Indiana Department of Education).

In Indiana, an individual charter school is considered to be its own local educational agency; it is treated as an autonomous entity that is independent from a school district. For some purposes, including funding and reporting of data to the Indiana Department of Education, charter schools are considered their own school corporations. Although charter public schools are exempt from some state and district regulations, they are held to high levels of accountability. In addition to meeting state and federal accountability requirements, charter schools also must meet the requirements set out in their charter and agreed to by their sponsor. A sponsor may revoke a school's charter at any time if the school is not producing positive results or fulfilling the terms of its charter. As with traditional public schools, charter public schools must have open enrollment policies and cannot discriminate based on disability, race, color, gender, national origin, religion, or ancestry (Indiana DOE).

The purpose of this report is to answer several crucial questions about charter schools in Indiana. The first question is a very basic one to set the foundation for our study: how do charter school students differ from students enrolled in traditional public schools—and more specifically, do charter school students differ from the traditional public school students in the districts from which the charter schools draw their students? To answer this question, we compared the demographic profile of each charter school to the demographic profile of the school district where that charter school resides and, presumably, where their students came from (their "home" district). Specifically, we examined the percentage of students receiving a free/reduced lunch, percentage of minority students, student stability, and percentage of students passing the Math and Language Arts sections of the Indiana Statewide Testing for Educational Progress (ISTEP). We also examined characteristics of the school as a whole, such as teacher salary, teacher/student ratios, and yearly monetary expenditure per student.

Knowing the characteristics of the population of charter school students allowed us to examine the second question: what is the level of growth in student academic performance in charter schools versus traditional public schools, when controlling for gender, ethnicity, and, most importantly, for initial level of student performance? To answer this question we used data drawn from the Northwest Evaluation Association's Measures of Academic Progress (NWEA MAP) test. Using data collected from all of Indiana's charter school students, we compared their academic growth to a carefully controlled sample of students from traditional Indiana public schools.

Our final question asks: which is more cost effective, charter schools or traditional public schools? To answer this question we focused on the cost to produce student academic achievement. We analyzed the average cost per student for academic growth in charter schools versus the average cost per student for the same amount of academic growth in traditional public schools. Using the demographic information from the charter schools' home districts, we chose a set of matching school districts in Indiana and calculated the cost per pupil for one

increment of growth on the NWEA MAP test for the charter schools and for the comparable school district.[1] This calculation provided an estimate of the cost of each unit of academic growth for the charters and the traditional public schools.

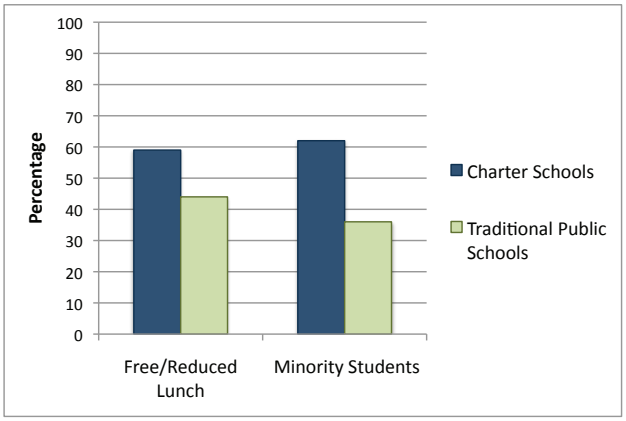
How do charter school students differ from traditional public school students?

Student Demographics & School Characteristics

The 2001 Indiana Charter School legislation allowed four-year public universities, public school districts, and the mayor of Indianapolis to sponsor charter schools. Currently, Ball State is the only university authorizing charter schools in Indiana, with 29 charters in operation. The mayor of Indianapolis has 17 charters in operation, while the Evansville-Vanderburgh School Corp. has two schools in operation and the Lafayette School Corporation hs one. Because nine of these schools opened in the 2008–09 school year, they are not included in this report. Appendix D contains characteristics of each charter school, with data from traditional public schools in their home district provided for comparison. Appendix E contains more specific data regarding the attendance, stability, student achievement, teacher salary, and yearly expenditures per student for charters and traditional public schools. These data were obtained from the Indiana Department of Education Web site (http://www.doe.state.in.us/asap/welcome.html).

The data in Figure 1 reveal that although some charters resembled the demographics of their home school district quite closely, overall the charter schools in Indiana served a larger percentage of students receiving free or reduced lunches than their home school districts. Fifty-nine percent of charter students received free or reduced lunches versus 44% of traditional public school students in the 2007–08 school year. Further, in the 2007–08 school year, 62% of charter school students in Indiana were members of ethnic minority groups, compared to 36% of the traditional public school students from their home school districts. (This data, disaggregated by individual charter school and school district, can be found in Appendix D.) These patterns suggest that Indiana charter schools are serving a different demographic than the traditional public schools in the districts where they are located. Specifically, a great many more charter school students are poor, and charter schools serve a larger percentage of ethnic minority students than are served by comparable traditional public schools in the district where the charters are located.

Figure 1: Percentage of Free/Reduced Lunch and Minority Students



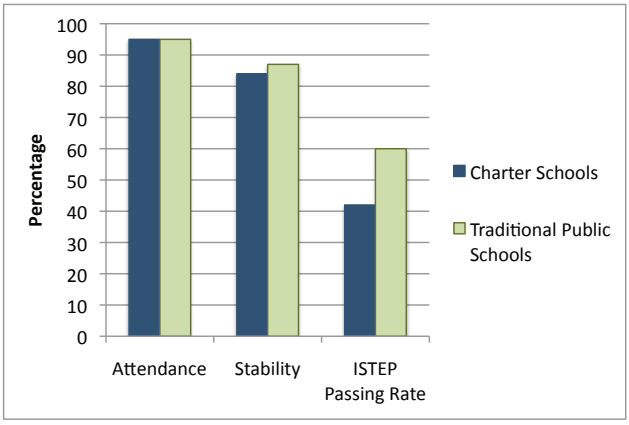
[1] Because not all school districts in Indiana administer the NWEA MAP test, it was not possible to use the data from the charter schools' actual home school district.

Attendance, Stability, ISTEP Scores & Expenditures

The data in Figure 2 reveal that both charter schools and traditional public schools showed very high student attendance rates (95%) for the 2007-08 school year. The charter schools students also showed similar stability rates (or average days enrolled in school) to the student in their home districts for the 2006-07 school year (the most recent complete data available), with the charter school students enrolled an average of 84% of school days and the traditional public school students enrolled an average of 87%. (These data, and the data for Figure 3, are disaggregated for charter school and home school district in Appendix E.) This suggests that both charter school and traditional school students were committed to attending school.

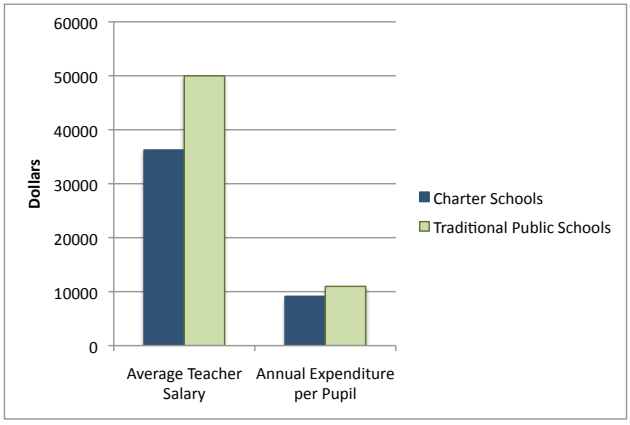
Finally, Figure 2 shows a marked difference in the average number of students passing both the Language Arts and the Math ISTEP tests between charter schools and the traditional public schools in their home district. In the 2007–08 school year, an average of 60% of the students tested in the home districts of the Indiana charter schools passed both sections of the ISTEP, as compared to 42% of the charter school students.

Figure 2: Percentages for Attendance, Stability and ISTEP Passing Rate



Charter schools and traditional public schools were also quite similar in the number of students per teacher, with an average of 17 students per teacher for both populations. As can be seen in Figure 3, however, there were large differences between the average teacher salaries offered at the charter schools in the 2007–08 school year, with charter school teachers making an average of $36,249 and traditional public school teachers making an average of $49,980. This difference may be due to the relatively younger ages of charter school teachers, who are more likely to be newly licensed graduates of teaching programs and, consequently, earn lower salaries than their more experienced counterparts in the traditional public schools. There also was a disparity in the 2006–07 yearly expenditures per pupil between the charter schools and the traditional public schools in their home districts in 2006–07 (the most recent year available), with the charters spending an average of $9,136 per student as compared to the traditional public schools that spent an average of $10,978 per student.

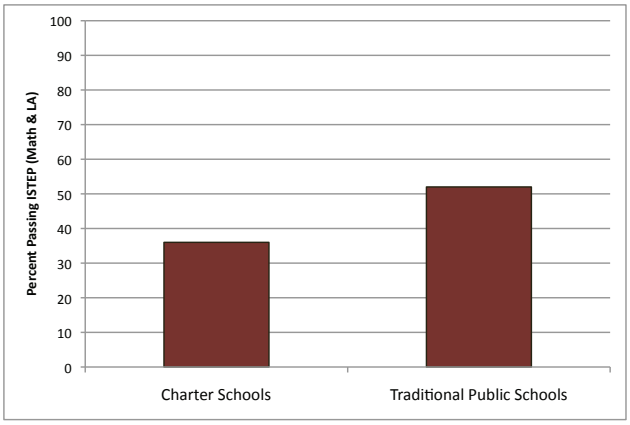
Figure 3: Average Teacher Salary and Annual Expenditure per Pupil



In summary, the comparison between Indiana charter schools and traditional public schools in their home districts reveals several important differences. First, charter schools educate more minority and low socioeconomic-status students than traditional public schools do, and they educate these children for less money per child than comparable traditional public schools do. Their students' ISTEP pass rates, however, are markedly lower than those of students in traditional pubic schools, suggesting that charter school students have lagged behind students in traditional public schools in academic achievement. While it is not possible to dismiss this difference, the poor and minority students that charter schools disproportionately educate are populations that have been shown to be traditionally disadvantaged in educational settings. In addition, this analysis does not take into account a priori differences between charter and traditional public school students.

An additional, and we believe crucial, difference between charter schools and traditional public schools lies in the beginning academic abilities of charter school and traditional public school students. Appendix F shows the ISTEP pass rate data from the past six years for each of the charter schools in Indiana, with comparable data from their home districts highlighted in blue print. These data reveal that in their first year of operation, the majority of Indiana charter schools enrolled students whose ISTEP scores were, on average, well below the average for the traditional public school students in their home districts. This is evident when we examine the ISTEP pass rates for the group of students entering each charter school in the fall of the school's first year of operation. Because ISTEP tests students' knowledge of the material covered in the previous academic year, each charter school's first year ISTEP pass rate actually is a reflection of the degree of the students' learning at their previous school. Appendix F shows the percentage of students passing both Math and Language Arts ISTEP for each year of the charter school's operation, as compared to the percentage of students passing both Math and Language Arts ISTEP in their home school district. The important comparison is between the percentage of students passing both Math and Language Arts in the first year of operation for each charter school (which appears in blue print) to the the percentage of students passing both Math and Language Arts in the same year in their home district (which appears in red print). As Figure 4 shows, although an average of 52% of students in the charter school's home district passed both ISTEP tests, only 36% of students who entered a charter school did so. These data suggest that students enter the charter schools with a significant academic disadvantage that the charter schools must overcome.

Figure 4: Percent Passing ISTEP (Math & Language Arts) for the First Year of a Charter School as Compared to Traditional Public Schools



What is the level of academic growth in charter school students as compared to traditional public school students?

Measuring Student Growth in Charter Schools

Given that the charter schools we examined began with academically disadvantaged students, an accurate picture of their subsequent success or failure cannot be drawn simply from examining ISTEP results. This is due in part to the fact that ISTEP is a *criterion-referenced* test that is best used to compare students' performance to a set standard, or cut score, to determine if they have met a defined minimum standard of academic achievement. A more accurate picture of student growth is found by examining students' performance on a *norm-referenced growth test*, which measures students' performance based on the amount of intellectual growth that has occurred between multiple testings and compares that growth to normative growth derived from a large sample of students.

The Northwest Evaluation Association has developed the Measures of Academic Progress to gauge academic growth over time. Students take the test twice a year (fall and spring), and the difference between these scores is a measure of student growth over the course of that academic year. More than 3,100 school districts across the United States administer the MAP Mathematics, Reading, and Language Usage tests. These tests are aligned to each state's measurement scales and content standards and often are used as an indicator of preparedness for state assessments. In Indiana, all of the charter schools and an additional 140 schools and school systems administer the NWEA tests.

Using the Northwest Evaluation Association Growth Research Database

It is the large number of students in Indiana taking the MAP test that makes it an ideal way to measure academic growth in charter schools. Using the data from more than seven years of testing, NWEA maintains a Growth Research Database that contains millions of records of student achievement from across the nation, including a great many students in both charter and traditional Indiana public schools. The database maintains records based on demographics such as ethnicity, gender, age, and socioeconomic status, and school information such as class size, district size, and location. As a result, researchers can construct a customized control group based on characteristics of an individual student to define a comparison group that shares these same characteristics. The control group used in the present study contains *aggregate control students,* which

are created by taking the average scores from approximately 51 students, matched to each individual student in the group of interest (in this study, Indiana charter school students) on the demographic characteristics determined by the researcher. Thus, each control student's score is actually the aggregate of many similar students, making the dataset far more representative of the population as a whole.

To determine whether the academic progress of Indiana charter school students differs significantly from the progress of traditional public school students, we obtained NWEA test scores from all charter school students in Indiana for the 2006–07 and 2007–08 school years. Further, an aggregate control "student" was formed for each charter school student by matching them with Indiana traditional public school students based on grade, gender, ethnicity and, most importantly, their fall 2006 and fall 2007 MAP scores[2]. Matching the students based on their fall MAP scores "levels the playing field," in that each charter student and their aggregate control student begin at exactly the same point on the MAP test, eliminating the difference between charter school students and traditional public school students found when examining ISTEP scores or pass rates. Thus any differences between MAP scores for the charter school students and the traditional public school students are due to differences in their educational experiences over these two years, and, not because the charter school students began with an achievement deficit.

Analysis of NWEA MAP Scores

Using hierarchical linear modeling, we analyzed the scores of Indiana charter school students versus aggregate control students taken from traditional public schools in Indiana, matched for gender, ethnicity, grade, and MAP scores for the fall of 2006 and then matched again in the fall of 2007. We included data only from charter students who had two full years of data; previous research has shown that transitions to new schools can disrupt learning, so we chose to examine data from students who had at least one year to adapt to the change of schools and then another year of data after the transition.

We examined the growth in students over the two-year period from the fall of 2006 to the spring of 2008. During this time, the MAP test was administered in both the fall and the spring semesters, resulting in four data points in each of three tests (Reading, Language Usage, and Math). The analysis was performed on the *difference scores* for each year; these difference scores were obtained by subtracting each student's fall score from spring score for each of the two years of data.[3] The results of this analysis can be seen in Table 1.

The analysis revealed a significant advantage for charter school students in each of the three MAP tests (see Table 1 for test averages). Specifically, charter students' Reading MAP scores increased an average of 6.25 points per year, while the aggregate control students' Reading MAP score increased an average of 4.9 points (see Figures 5a and 5b). Thus the charter school students showed an increase in growth of 1.35 points per year over the aggregate control students, or 22% more growth than the control students.[4] To place these scores in a national context, the average yearly growth on the MAP Reading test is 5.25, one full point lower than the growth of the charter school students.

[2] See Appendix B for a complete discussion of "aggregate control" students and how they were utilized in this study.
[3] A complete description of the analysis performed and the logic of using difference scores can be found in Appendix A.
[4] HLM significance levels and effects sizes can be found in Appendix A.

Table 1: NWEA MAP Scores for Charter and Aggregate Control Students in Reading, Math, and Language Usage

Reading MAP Scores

	Fall '06	Spring '07	**Growth**	Fall '07	Spring '08	**Growth**	**Yearly Average**
Charter School Student	197.26	204.20	**6.94**	205.04	210.59	**5.55**	**6.25**
Aggregate Control Student	197.20	202.78	**5.58**	205.01	209.17	**4.22**	**4.90**

Math MAP Scores

	Fall '06	Spring '07	**Growth**	Fall '07	Spring '08	**Growth**	**Yearly Average**
Charter School Student	201.24	209.26	**8.02**	210.01	216.56	**6.55**	**7.29**
Aggregate Control Student	201.24	207.52	**6.28**	209.98	215.63	**5.65**	**5.97**

Language Use MAP Scores

	Fall '06	Spring '07	**Growth**	Fall '07	Spring '08	**Growth**	**Yearly Average**
Charter School Student	198.20	205.90	**7.70**	206.13	211.74	**5.61**	**6.64**
Aggregate Control Student	198.18	203.86	**5.68**	206.07	210.41	**4.34**	**5.01**

Figure 5a: NWEA MAP Reading Scores for Charter School Students Compared to Aggregate Control Students

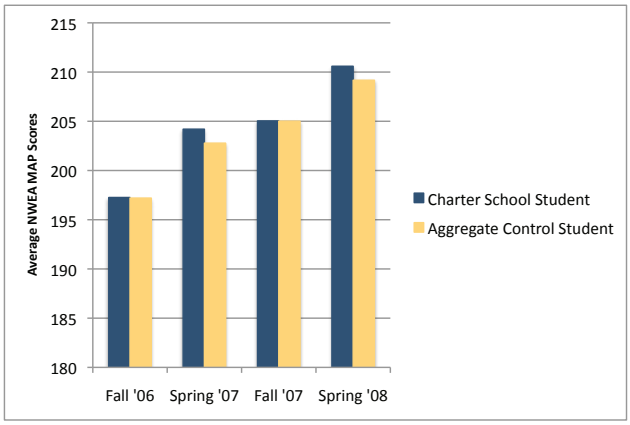
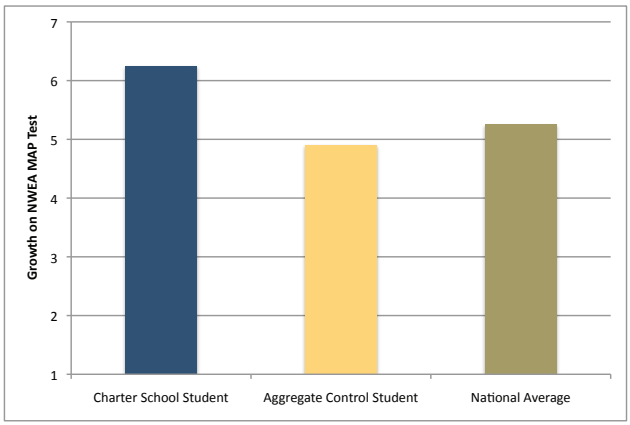


Figure 5b: Average Growth on the NWEA MAP Reading Test for Charter and Aggregate Control Students as Compared to National Averages



Similar differences were found in the Math MAP scores as can be seen in Figure 6a. Again, the charter school students showed a significantly higher yearly increase than did the aggregate control students, with the charter school students increasing an average of 7.29 MAP points per year, and the aggregate control students increasing an average of 5.97 MAP points per year—an increase for the charter school students of 1.32 points per year, or 18% more growth than the aggregate control students (Figure 6b). The charter school students' growth in Math was comparable to the average national growth on the MAP Mathematics test (7.411).

Figure 6a: NWEA MAP Math Scores for Charter School Students Compared to Aggregate Control Students

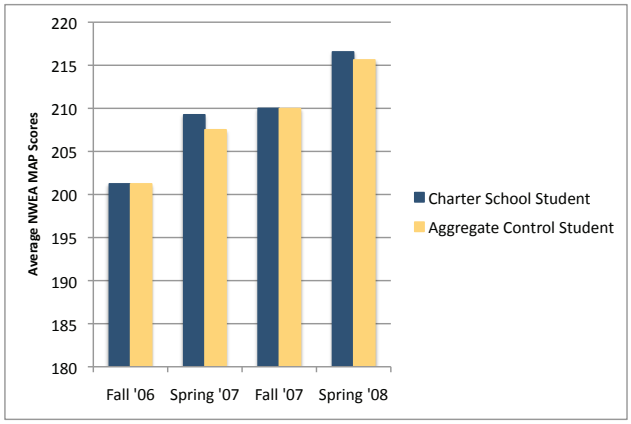
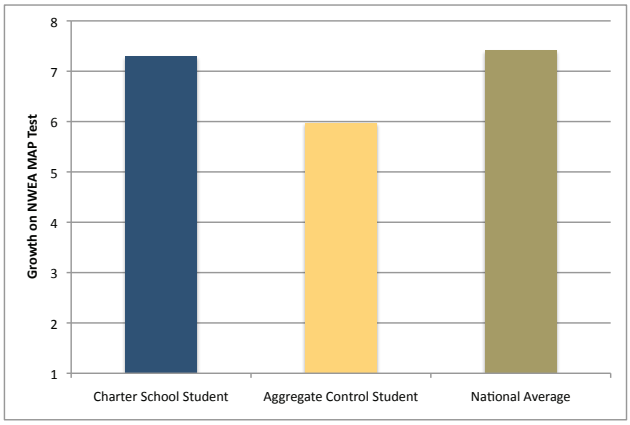


Figure 6b: Average Growth on the NWEA MAP Math Test for Charter and Aggregate Control Students as Compared to National Averages



Finally, as depicted in Figure 7a, the greatest increase in performance was seen in the Language Usage MAP test, with the charter school students showing a yearly average increase of 6.64 MAP points, and the aggregate control students showing an increase of 5.01 MAP points. The charter school students' gain was 1.63 MAP points greater than the aggregate control students, representing 25% more growth. The charter school students' growth in Language Usage was larger than the national average growth of 5.26 on the Language Usage MAP test as shown in Figure 7b.

Figure 7a: NWEA MAP Language Usage Scores for Charter School Students Compared to Aggregate Control Students

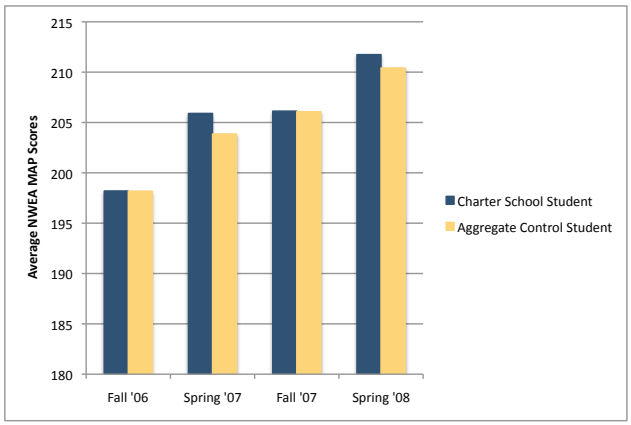
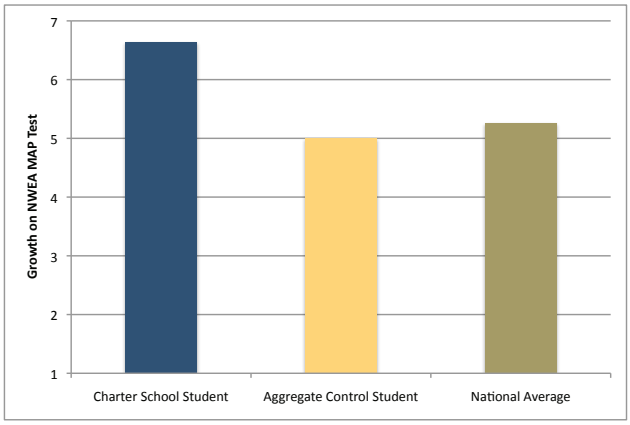


Figure 7b: Average Growth on the NWEA MAP Language Usage Test for Charter and Aggregate Control Students as Compared to National Averages



The results of these analyses suggest that when initial academic ability is controlled for, Indiana charter school students evidence academic growth that exceeds the growth of their traditional public school counterparts, and in two of the MAP test content areas, Reading and Language Usage, their growth exceeds the national growth averages. It is important to note that although the growth differences between the charter school students and the traditional public school students may not appear to be large, they are cumulative, and a one-point gain each year over the course of a child's education can lead to a substantial increase in academic growth.

Which are more cost effective, charter schools or traditional public schools?

Cost Comparisons Between Charter and Traditional Public Schools

In order to compare the cost per student at an Indiana charter school to the cost per student at a traditional public school, it is necessary to have a common denominator—that is, a measure of student learning that can be used appropriately to compare across students and across grades. To do this, we used the aggregate NWEA scores from students in Indiana charter schools across each of the three test subjects and divided that number by the average cost per student per year for the 2006–07 school year, as obtained from the Indiana DOE Web site. This calculation allows an estimate of the average "dollar cost" for each unit of academic growth. For instance, if the average yearly cost per student at all Indiana charter schools is $10,000 and the average yearly growth on the MAP is five, then each one-unit increase on the MAP test came at a cost of approximately $2,000.

To provide a valid comparison of the cost of student growth in traditional public schools, 14 Indiana school districts were chosen based on their similarity in locale (urban, suburban, and rural), percentage of free/reduced lunch population, percentage of minority population, and the amount spent per student by the school district in which the Indiana charter schools reside. (Please note that these data were not obtained from the actual district in which the charter schools reside.) The average growth for all of the students in each of these districts, as measured by their aggregate MAP scores, was obtained from NWEA and the average expenditures per student were obtained from the Indiana DOE Web site.

The results of this comparison revealed that, overall, the cost per unit of growth on the NWEA MAP for students in Indiana charter schools was $1,311, while the cost per unit of growth for students in traditional public schools was $2,028. When compared across the three locales of interest (urban, suburban and rural) the cost per unit of growth is $1,372 for urban charters, $1,384 for suburban charters, and $1,314 for rural charters, as compared to $4,064 for urban traditional publics, $1,470 for suburban traditional publics, and $1,282 for rural traditional publics.

Limitations of this Study and Future Directions

Although the use of the NWEA Growth Research Database allows us to control for initial differences in academic achievement, there are some limitations to the conclusions that can be drawn based on the present findings. First, the current analysis is based on only two years of data. The MAP test is designed to be a longitudinal growth test, and the ideal evaluation of increases in academic growth in charter school students would be through the use of an ongoing, multiyear project.

Second, although we have data from four test implementations from each charter school student (a within-student dataset), the data for the aggregate control is within-student only for each year, and not across both years. That is, the students from the Growth Research Database who contributed to the fall 2006 aggregate control group were the same students who contributed to the spring 2007 aggregate control group, but a different sample of students constituted the fall 2007 and the spring 2008 aggregate control group. A better comparison would be between multiyear longitudinal data from the Indiana charter school students and a aggregate control group in which the same students contribute to each aggregate control group for the entire length of the study. The number of traditional public school students from Indiana in the Growth Research Database who matched the charter school students on the crucial demographics was not sufficient for this comparison; therefore it was not possible to conduct this preferred analysis and maintain an all-Indiana student dataset.

An alternative methodology

A possible solution to this problem is to use stratified random sampling to design a representative group of charter school students, and then form a within-student aggregate control group based on this smaller sample. This also would allow us to address an additional limitation of this work—that of a lack of generalizability to other student populations. Specifically, we compared the performance of Indiana charter school students to that of students matched for initial performance (which may have been below grade level) who also were from traditionally disadvantaged populations. We do not know if the differences found between charter school students and aggregate control students would hold across ability levels. The continuation of this work would allow us to include an additional aggregate control group that contained students from less-disadvantaged groups.

Finally, although the Hierarchical Linear Model analyses showed a significant growth for charter school students as compared to the aggregate control students, the effect sizes (as reported in Appendix B) were small, suggesting that the statistically significant difference between the charter school students and the aggregate control groups is tempered by the variability in the data. Effect size, as defined by Cohen (1988), is a measure of the strength of the relationship between two variables. In statistical analyses it is useful to know not only whether an effect is *statistically significant* but also whether the effect is *meaningful* in the context of real life. To determine whether a statistically significant effect is also meaningful, the size of the difference between the two variables is divided by the amount of variability in the data. Thus a moderate difference obtained from a very consistent dataset often will result in a larger effect size than a very large difference obtained from highly variable data. The effect sizes found in this study fall in Cohen's "small" range of .20 to .40, and therefore further research should be done before any definitive conclusions are drawn.

There also are limitations on what we can conclude about the cost effectiveness of the Indiana charter schools as compared to traditional public schools. In this analysis we performed a comparison between the charter schools and a group of school districts matched to the charter schools' home districts. This resulted in a sample of 14 school districts being used to calculate the cost effectiveness of the traditional public schools. Although we were careful to choose a representative sample, it is possible that our results are not representative and that another randomly chosen set of school districts would lead to a different outcome. Consequently, this analysis should be accompanied by an analysis that includes a larger sample of school districts or, ideally, all of the school districts in Indiana for which NWEA data are available. The addition of more school districts also would allow us to investigate what characteristics of these school districts led to the observed differences in performance, which was not possible in the present study.

Summary and Implications

The purpose of this report is to answer several key questions about charter schools in Indiana. Our first question, to establish a base for our study, was how charter school students differ from the traditional public school students in the school districts they attended prior to enrolling in a charter. Using data available from the Indiana Department of Education, it appears that, on the whole, charter school populations include more minority and low socioeconomic-status children than do traditional public schools in their home districts. The charter school students lag behind their traditional public school peers in ISTEP scores, with an average of 18% fewer charter students passing both the Mathematics and Language Arts portion of ISTEP. This difference in academic performance between the charter school students and students in traditional public schools can be traced to the beginning of the students' enrollment in the charter schools. On average, the

group of students enrolling in Indiana charter schools during their first year of operation began their charter school careers with an educational deficit in their prior achievement.

Knowing the characteristics of the population of charter school students allowed us to examine the second question: what is the level of growth in student academic performance in charter schools versus traditional public schools, when controlling for gender, ethnicity, and, most important, for initial level of student performance? Using data from the NWEA MAP test collected from all of Indiana's charter school students, we compared their academic growth to a carefully controlled sample of students from traditional Indiana public schools and found that in the three areas tested by the MAP (Reading, Language Usage, and Mathematics) there was a consistent advantage for the students in charter schools: they showed an average 1- to 1.5-point greater increase in the MAP scores when compared to students in traditional public schools.

Our final question asked: which is more cost effective, charter schools or traditional public schools? To answer this question we compared charter schools and traditional public schools based on the average cost per student of one unit of academic growth on the MAP test. Using the demographic information from the charter schools' home districts, we chose a set of matching school districts in Indiana and calculated the cost per pupil for one increment of growth on the MAP test for the charter schools and for the comparable school district. This "growth per dollar" estimate revealed that each point increase on the MAP test cost approximately $1,311 for the charters and $2,028 for the traditional public schools.

In sum, the results of this study suggest that although Indiana charter school students consistently have shown lower ISTEP scores than their traditional public school counterparts, when the appropriate comparison groups are used, Indiana charter school students show significantly more academic growth than does a control group of students in traditional public schools who were matched for crucial demographic characteristics and initial academic achievement. Further, this growth is being accomplished at a lower cost per student in the charter schools when compared to school districts matched for free/reduced lunch, percentage of minority students, and annual expenditures per student.

APPENDIX A

Hierarchical linear modeling (HLM)

Hierarchical linear modeling, also known as multilevel analysis, is a more advanced form of simple linear regression and multiple linear regression. Multilevel analysis allows variance in outcome variables to be analyzed at multiple hierarchical levels, whereas in simple linear and multiple linear regression all effects are modeled to occur at a single level. Thus, HLM is appropriate for use with nested data. For example, in educational research, data are often considered as pupils nested within classrooms nested within schools. HLM is superior to traditional linear regression or multiple regression in that it calculates the model of best fit for each of the different levels of data—student, classroom, and school—and then uses each of these models to best estimate the overall pattern of results. These calculations are quite complex and were not possible before the advent of computers.

The dataset for the present study included data from charter school students from 31 of the 41 charter schools that are operating in Indiana. Three schools were not included because they did not complete NWEA testing; six schools were excluded because they had opened less than two years ago and, therefore, could not provide two years of consistent data; and one was excluded because it had recently merged with another charter school and this newly formed school did not have two years of data.

The HLM analyses were performed on the 2,669 charter students who had completed the MAP Reading test for all four time periods (fall 2006, spring 2007, fall 2007 and spring 2008); the 2,609 charter students who completed all four administrations of the Language Usage MAP; and the 2,705 charter students who completed all four administrations of the Mathematics MAP test.

In this project we performed two different HLM analyses on the data. First, we conducted a "fully loaded" three-level Hierarchical Multivariate Linear Model, with time of testing (fall 2006, spring 2007, fall 2007, and spring 2008) as the Level 1 within-participant variable. The Level 2 student variables were "real" vs. "control," gender, ethnicity, and grade, while the Level 3 variable, within which the students are clustered, was school. This analysis allowed us to examine differences between and across the two different groups of students—charter and control—and to break down those differences further according to gender, ethnicity, and grade. We found a significant effect for time of testing and student versus control in these analyses; however, the effect size for each of these analyses, as calculated by Cohen's D, was below .20 because of the high variability in the data from the testing in the fall of 2006 to testing in spring of 2008.

Examination of the data revealed that this variability was due to the presence of outlier scores at both ends of the population distribution; some students showed increases or decreases of up to 60 points on the MAP test. Given that the MAP test is a growth test and theoretically a student's score should never *decrease* because such a finding would suggest negative growth, the negative scores were particularly troublesome. The explanation for this variability is quite simple: the MAP is administered online using desktop or laptop computers. If the supervision of the students at the time of testing was not adequate, students had the opportunity simply to choose random answers to speed the test along. This was a problem only with the charter school students—the use of the data from 51 students to form each aggregate control student effectively controlled the impact of this source of variability affecting the composite, aggregate student's score.

The observation of outliers with "negative growth" led to the use of *difference scores* computed over the two years of testing. The difference scores were a more accurate reflection of the students' true performance in that if they responded randomly during one testing event, their data from the three other events would mitigate the variability introduced in the data. The data were analyzed using a two-level hierarchical linear model with control group/charter student, gender, ethnicity, and grade as the student Level 1 variables, and number of years in operation as the school Level 2 variable. These analyses revealed a significant effect of charter school students versus control group students for each of the three tests: Reading (Regression Coefficient B1=1.35, t=3.97 (5336 d.f.) p <.001) with an effect size of d = .22; Math (Regression Coefficient B1=1.31, t=2.87 (5408 d.f.) p <.001) with an effect size of d = .23; and Language Usage (Regression Coefficient B1=1.61, t=4.81 (5186 d.f.) p <.001) with an effect size of d = .27.

APPENDIX B

NWEA MAP and Aggregate Control Groups

The Northwest Evaluation Association's Measures of Academic Progress, or MAP, measures elementary and high school students' growth in three academic areas: Reading, Language Usage, and Mathematics. The MAP is a computerized adaptive test. On the designated testing day, students take the MAP using either a desktop or a laptop computer, in the school computer lab or in their classroom. The MAP is adaptive in that when a student is taking the test, the difficulty of each question is based on how well that student answers the previous questions. As the student answers questions correctly, subsequent questions become more difficult. When the student answers these more difficult questions incorrectly, the questions become easier. In an optimal test, a student answers approximately half the questions correctly and half incorrectly. The student's final score is an estimate of the student's achievement level. This testing method makes the MAP a *growth* test. As a student's academic ability grows, the difficulty of the questions he or she can answer increases. As the difficulty of the correctly answered questions increases, so does the student's MAP score. The scale used to measure a child's progress is called the RIT scale (Rasch unIT). The RIT scale is an equal-interval scale, meaning that a one-unit increase in a student's MAP score at any age reflects an equal increase in academic ability.

The Growth Research Database is a large repository of student academic achievement information using NWEA test results. The database is the basis for developing aggregate control groups. The first step in forming a aggregate control group is to define critical district, school, or student characteristics for the "study group." In this research we defined our study group as all Indiana charter school students and specified that the aggregate control group should match the student in the study group based on residence in Indiana, grade, gender, ethnicity, and initial (fall) MAP score.

These characteristics of each student in the study group were identified and then used to match to all other students in the Growth Research Database that had the same characteristics. After all of the matching students were identified (aggregate control group-qualified candidates), NWEA chose a random sample of 51 students from the qualified candidates to form the final aggregate control group for each student. On several occasions fewer than 51 students were identified for the students in our study group, and consequently the 51-student minimum to form a control student was relaxed.

Ideally, the same aggregate control group-qualified candidates should be used in both the fall 2006–spring 2007 aggregate control group and in the fall 2007–spring 2008 aggregate control group. However, the number of students in the Growth Research Database who matched our study group students on the crucial character-istics was already barely sufficient to form an aggregate control group for each of the two testing years; requiring that each aggregate control group candidate provide two continuous years of data would have made the forma-tion of aggregate control groups made up of students who resided in Indiana impossible. Consequently we chose to use two different aggregate control groups—one for the fall 2006–spring 2007 time period and another for the fall 2007–spring 2008 time period. The fall 2007–spring 2008 aggregate control group was matched to the study group based on fall 2007 testing scores.

APPENDIX C

In order to compare the cost per unit of growth between charter schools and traditional public schools, the home district for each charter school was determined based on the address for the charter school published on the Indiana DOE Web site in July 2008. The relevant information (expenditures per student per year, locale according to National Center for Education Statistics codes, percentage of free/reduced lunch, and percentage of minority students) was obtained from the DOE for each charter school and for the school districts that had charter schools within their borders. This was possible because Indiana charter schools are both individual schools and independent school districts; consequently, they are required to report financial information to DOE as well as student demographics and achievement data.

After obtaining the relevant information for each home district, we chose 14 Indiana school districts that matched the charters' home districts based on NCES locale code, free/reduced lunch, and percentage of minority students to within +/- 20%, and to within $500 of annual expenditures per student. We were unable to use the charter schools' home districts for two reasons: first, not all school districts in Indiana use Northwest Evaluation Association testing, and many of the charters resided in districts that did not administer the test; and, second, in those districts that do administer NWEA, confidentiality agreements precluded NWEA from releasing their data to us in any situation that could lead to their anonymity being breached.

The group of 14 school districts comprised six urban districts, five suburban districts, and three rural districts. Of those districts, six had 0–30% minority students, seven had 31–60% minority students, and one exceeded 90% minority students. Five of the districts had fewer than 30% of students receiving free/reduced lunches, five had between 31% and 60%, and four had more than 61% of their students receiving free/reduced lunches. The average annual expenditure per student for these districts was $10,298, which is comparable to the average amount of $10,978 annual expenditures spent by the home school districts of Indiana charter schools, and the $10,252 that was the state average for the 2005–2007 school years, combined.

These 14 school districts were compared to the 31 charter schools included in the hierarchical linear modeling analyses. These charter schools resided in 14 different school districts. Of these 14 home school districts, five were urban districts, six were suburban, and three were rural. Of those districts, eight had 0–30% minority students, four had 31–60% minority students, and two exceeded 90% minority students. Four of the districts had fewer than 30% of students receiving free/reduced lunches, six had between 31% and 60%, and four had more than 61% of their students receiving free/reduced lunches.

APPENDIX D

Characteristics of Indiana charter schools as compared to the school districts in which they reside.

Name	Years in operation	Authorizer	Grades	Locale	07-08 Student enrollment	07-08 Free/ reduced Lunch	07-08 % Minority students
East Allen County Schools						**36**	**27.2**
Timothy L. Johnson Academy	6 (02-03)	BSU	K-5	Urban	187	94	99.5
Evansville-Vanderburgh School Corp.						**50.7**	**24.2**
Signature School (Evansville)	6 (02-03)	EVSC	9-12	Urban	300	8	11.3
Joshua Academy (Evansville)	4 (04-05)	EVSC	K-5	Urban	219	70	93.6
Fort Wayne Community Schools						**49.8**	**45.7**
Imagine MASTer Academy	1 (07-08)	BSU	K-6	Urban	476	60	34
Gary Community School Corp.						**66**	**99.5**
West Gary Lighthouse Charter	2 (06-07)	BSU	K-7	Urban	420	80	99.8
KIPP Lead College Prep - Gary	2 (06-07)	BSU	5-8	Urban	148	n/a	98
East Chicago Lighthouse Charter	2 (06-07)	BSU	K-6	Suburban	204	81	97.5
Gary Lighthouse Charter School	3 (05-06)	BSU	K-8	Urban	553	88	99.8
21st Century Charter	3 (05-06)	BSU	K-12	Urban	315	76	100
Thea Bowman Leadership Academy	5 (03-04)	BSU	K-11	Urban	649	55	100
Charter School of the Dunes	5 (03-04)	BSU	K-8	Urban	437	66	97.5
Indianapolis Public Schools						**79.6**	**76.4**
Monument Lighthouse Charter	1 (07-08)	Mayor	K-7	Urban	316	85	95
Indiana Math & Science Academy	1 (07-08)	BSU	6-8	Urban	182	n/a	85
Herron High School	2 (06-07)	Mayor	9-12	Urban	212	31	53.8
Challenge Foundation Academy	2 (06-07)	Mayor	K-5	Urban	338	76	100
Indianapolis Lighthouse	3 (05-06)	Mayor	PK-8	Urban	381	82	66.7
21st Century/Fountain Square Academy	3 (05-06)	Mayor	5-12	Urban	237	83	28.3
Southeastern Neighborhood School of Excellence	4 (04-05)	Mayor	K-6	Urban	253	87	28.5
Indianapolis Metropolitan Career Academy	4 (04-05)	Mayor	K-12	Urban	342	63	71.9
Charles A. Tindley Accelerated School	4 (04-05)	Mayor	6-12	Urban	325	n/a	99
KIPP Indianapolis Preparatory	5 (03-04)	Mayor	5-8	Urban	250	84	100
Andrew J. Brown Academy	5 (03-04)	Mayor	K-8	Urban	624	70	97.1
Irvington Community School	6 (02-03)	BSU	K-11	Urban	527	42	15.7
Flanner House Elementary	6 (02-03)	Mayor	K-5	Urban	233	78	99.6
Christel House Academy	6 (02-03)	Mayor	K-8	Urban	414	82	58.9
21st Century/Fall Creek Academy	6 (02-03)	Mayor	K-12	Urban	321	70	94.1

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BSU—Ball State University
EVSC—Evansville-Vanderburgh School Corp.
Mayor—Mayor of Indianapolis

Name	Years in operation	Authorizer	Grades	Locale	07-08 Student enrollment	07-08 Free/ reduced Lunch	07-08 % Minority Students
MSD Decatur Township						**49**	**17.1**
Decatur Discover Academy	3 (05-06)	Mayor	7-12	Urban	135	66	8.9
MSD Lawrence Township						**42**	**54.5**
Lawrence Early College High School	2 (06-07)	Mayor	9-12	Urban	164	48	68.3
Hope Academy	2 (06-07)	Mayor	9-12	Urban	40	13	10
South Bend Community School Corp.						**60**	**59.3**
Veritas Academy	6 (02-03)	BSU	K-8	Urban	167	49	54.5
Carmel Clay Schools						**6**	**18.3**
Options Charter School (Carmel)	6 (02-03)	BSU	9-12	Suburban	127	11	9.4
Lafayette School Corp.						**55**	**35**
New Community School	6 (02-03)	BSU	K-7	Suburban	90	n/a	30
Lake Central School Corp.						**12**	**20.4**
Campagna Academy	6 (02-03)	BSU	9-12	Suburban	105	39	83.8
Noblesville Schools						**17**	**9.8**
Options Charter School (Noblesville)	2 (06-07)	BSU	9-12	Suburban	129	20	5.4
School City of East Chicago						**90**	**97.8**
East Chicago Urban Enterprise Academy	3 (05-06)	BSU	K-6	Suburban	331	86	99.4
Southwest School Corp.						**41**	**2.9**
Rural Community Academy	4 (04-05)	BSU	K-8	Suburban	124	50	0
LaPorte Community School Corp.						**39**	**15.9**
Renaissance Academy Charter	1 (07-08)	BSU	K-8	Rural	95	9	22.1
Mt. Vernon Community School Corp.						**13**	**13.5**
Geist Montessori Academy	2 (06-07)	BSU	1-8	Rural	87	8	24.1
New Albany-Floyd County Consolidated School Corp.						**36**	**15.7**
Community Montessori	6 (02-03)	BSU	K-9	Rural	443	21	11.1
Richmond Community Schools						**58**	**22.6**
Galileo Charter School	3 (05-06)	BSU	K-5	Rural	221	81	65

BSU—Ball State University
EVSC—Evansville-Vanderburgh School Corp.
Mayor—Mayor of Indianapolis

APPENDIX E

Characteristics of Indiana charter school student achievement and school expenditures as compared to the school districts in which they reside.

Name	07-08 Student attend-ance	06-07 Student stability (average days enrolled)	06-07 ISTEP % passed both LA & Math all grades	07-08 ISTEP % passed both LA & Math all grades	07-08 Avg. Teacher Salary	06-07 Students per Teacher	06-07 Expend-itures Per Pupil (All Funds)
East Allen County Schools	**96.2**	**88.2**	**62.5**	**62.8**	**51,388**	**18.3**	**9,712**
Timothy L. Johnson Academy	97.1	87.8	23.1	20.3	32,630	18.7	8,618
Evansville-Vanderburgh School Corp.	**96.3**	**85.2**	**53.7**	**56.2**	**48,446**	**15.6**	**10,400**
Signature School (Evansville)	97.2	87.8	87.4	95.2	43,804	13.3	6,596
Joshua Academy (Evansville)	97.3	93.0	45.0	53.4	30,212	16.3	7,482
Fort Wayne Community Schools	**95.3**	**86.9**	**53.3**	**54.0**	**47,769**	**17.0**	**10,648**
Imagine MASTer Academy	95.0	n/a	n/a	50.2	34,461	n/a	n/a
Gary Community School Corp.	**96.1**	**75.3**	**30.8**	**35.7**	**56,107**	**17.3**	**11,874**
West Gary Lighthouse Charter	91.9	92.3	16.7	27.7	38,324	17.9	8,635
KIPP Lead College Prep - Gary	n/a	90.0	29.6	28.1	n/a	16.2	12,365
East Chicago Lighthouse Charter	91.3	88.1	11.1	29.9	37,476	23.0	9,225
Gary Lighthouse Charter School	95.2	89.4	22.1	29.2	37,680	18.8	10,300
21st Century Charter	98.7	72.9	12.1	12.5	35,746	20.3	10,512
Thea Bowman Leadership Academy	98.0	95.1	48.6	58.9	40,108	17.3	8,130
Charter School of the Dunes	n/a	91.8	24.8	27.4	33,843	17.5	9,323
Indianapolis Public Schools	**94.1**	**74.6**	**37.7**	**40.4**	**53,779**	**15.0**	**13,357**
Monument Lighthouse Charter	96.4	n/a	n/a	36.0	37,743	n/a	n/a
Indiana Math & Science Academy	n/a	n/a	n/a	35.3	n/a	n/a	n/a
Herron High School	95.6	83.1	55.7	53.6	34,013	13.1	13,326
Challenge Foundation Academy	96.2	88.9	35.9	32.7	n/a	n/a	n/a
Indianapolis Lighthouse	n/a	75.9	26.7	29.9	36,780	18.2	13,933
21st Century/ Fountain Square Academy	90.4	72.0	19.9	25.0	36,125	16.6	9,817
Southeastern Neighborhood School of Excellence	94.0	84.2	39.6	39.3	30,615	13.8	8,193
Indianapolis Metropolitan Career Academy	92.0	n/a	n/a	13.8	40,548	n/a	n/a
Charles A. Tindley Accelerated School	97.0	77.3	53.8	64.8	n/a	11.1	12,197
KIPP Indianapolis Preparatory	n/a	91.6	44.0	41.0	51,982	22.3	11,499
Andrew J. Brown Academy	98.8	86.6	54.0	50.0	33,158	20.6	7,432
Irvington Community School	n/a	87.3	59.2	61.2	34,786	15.2	11,896
Flanner House Elementary	96.4	88.2	45.7	41.0	32,998	16.2	7,325
Christel House Academy	96.4	93.8	55.8	54.6	42,661	17.5	11,266
21st Century/Fall Creek Academy	96.0	72.0	32.6	41.5	37,214	21.7	8,020

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Name	07-08 Student attend-ance	06-07 Student stability (average days enrolled)	06-07 ISTEP % passed both LA & Math all grades	07-08 ISTEP % passed both LA & Math all grades	07-08 Avg. Teacher Salary	06-07 Students per Teacher	06-07 Expend-itures Per Pupil (All Funds)
MSD Decatur Township	**95.5**	**88.0**	**57.8**	**58.2**	**54,323**	**18.5**	**11,306**
Decatur Discover Academy	83.3	79.3	20.0	23.0	45,304	14.9	8,397
MSD Lawrence Township	**95.8**	**87.9**	**59.5**	**58.6**	**56,650**	**18.0**	**11,760**
Lawrence Early College High School	95.7	83.6	36.5	44.8	37,458	22.6	4,908
Hope Academy	82.6	62.1	n/a	n/a	45,538	18.7	13,000
South Bend Community School Corp.	**95**	**81.4**	**47.9**	**47.2**	**48,975**	**17.3**	**12,263**
Veritas Academy	95.1	93.1	48.5	39.0	28,237	11.0	5,335
Carmel Clay Schools	**96.9**	**95.7**	**89.1**	**89.3**	**52,218**	**17.0**	**10,786**
Options Charter School (Carmel)	94.8	78.0	12.1	23.5	37,125	21.8	7,952
Lafayette School Corp.	**95.8**	**84.5**	**51**	**53.6**	**50,589**	**15.2**	**10,048**
New Community School	94.5	n/a	n/a	70.8	25,230	12.8	7,170
Lake Central School Corp.	**96.5**	**93**	**77**	**75.1**	**48,014**	**19.4**	**9,104**
Campagna Academy	97.5	64.4	13.2	10.8	38,737	22.0	9,381
Noblesville Schools	**96.1**	**90.0**	**80.2**	**77.4**	**47,686**	**18.4**	**8,439**
Options Charter School (Noblesville)	93.8	70.8	19.4	30.4	41,827	14.5	8,225
School City of East Chicago	**94.4**	**81.8**	**41.5**	**41.7**	**49,758**	**17.5**	**16,298**
East Chicago Urban Enterprise Acad.	95.3	95.3	43.8	55.8	39,118	17.7	7,930
Southwest School Corp.	**94.7**	**92.2**	**59.1**	**60.1**	**45,817**	**14.9**	**10,644**
Rural Community Academy	94.8	88.2	41.0	55.4	30,583	12.9	7,060
LaPorte Community School Corp.	**96.4**	**86.1**	**71.5**	**71.8**	**47,980**	**16.9**	**10,656**
Renaissance Academy Charter	96.4	n/a	n/a	32.3	29,750	n/a	n/a
Mt. Vernon Community School Corp.	**96.8**	**94.9**	**72.8**	**73.9**	**42,504**	**18.3**	**10,030**
Geist Montessori Academy	99.1	82.0	81.8	75.0	32,446	12.7	11,096
New Albany-Floyd County Consolidated School Corp.	**95.3**	**89.2**	**64.7**	**63.9**	**48,770**	**17.7**	**10,036**
Community Montessori	100	86.6	58.8	49.8	24,489	18.8	7,235
Richmond Community Schools	**95.4**	**83.2**	**56.3**	**56**	**48,878**	**15.3**	**10,252**
Galileo Charter School	95.9	78.5	21.7	38.7	n/a	16.3	6,849

APPENDIX F

ISTEP scores for the first year of charter operation compared to school district averages.

Name	Years in operation	02-03 ISTEP % passed both LA & Math all grades	03-04 ISTEP % passed both LA & Math all grades	04-05 ISTEP % passed both LA & Math all grades	05-06 ISTEP % passed both LA & Math all grades	06-07 ISTEP % passed both LA & Math all grades	07-08 ISTEP % passed both LA & Math all grades
East Allen County Schools		**53.6**	**58.3**	**60.9**	**62.7**	**62.5**	**62.8**
Timothy L. Johnson Academy	6 (02-03)	9.5	20.7	10.5	18.0	23.1	20.3
Evansville-Vanderburgh School Corp.		**53.7**	**56.6**	**54.1**	**56.3**	**53.7**	**56.2**
Signature School (Evansville)	6 (02-03)	100.0	89.9	94.1	89.6	87.4	95.2
Joshua Academy (Evansville)	4 (04-05)			42.3	50.5	45.0	53.4
Fort Wayne Community Schools							**54.0**
Imagine MASTer Academy	1 (07-08)						50.2
Gary Community School Corp.			**29.9**	**28.1**	**28**	**30.8**	**35.7**
West Gary Lighthouse Charter	2 (06-07)					16.7	27.7
KIPP Lead College Prep - Gary	2 (06-07)					29.6	28.1
East Chicago Lighthouse Charter	2 (06-07)					11.1	29.9
Gary Lighthouse Charter School	3 (05-06)				21.6	22.1	29.2
21st Century Charter	3 (05-06)				18.4	12.1	12.5
Thea Bowman Leadership Academy	5 (03-04)		23.1	32.7	44.9	48.6	58.9
Charter School of the Dunes	5 (03-04)		20.3	18.0	26.2	24.8	27.4
Indianapolis Public Schools		**29.9**	**34.4**	**35.6**	**39**	**37.7**	**40.4**
Monument Lighthouse Charter	1 (07-08)						36.0
Indiana Math & Science Academy	1 (07-08)						35.3
Herron High School	2 (06-07)					55.7	53.6
Challenge Foundation Academy	2 (06-07)					35.9	32.7
Indianapolis Lighthouse	3 (05-06)				23.9	26.7	29.9
21st Century Charter/ Fountain Square Academy	3 (05-06)				17.2	19.9	25.0
Southeastern Neighborhood School of Excellence	4 (04-05)			8.3	33.9	39.6	39.3
Charles A. Tindley Accelerated School	4 (04-05)			29.6	35.0	53.8	64.8
KIPP Indianapolis Preparatory	5 (03-04)			18.6	29.7	44.0	41.0
Andrew J. Brown Academy	5 (03-04)		19.4	38.2	58.4	54.0	50.0
Irvington Community School	6 (02-03)	35.0	60.0	56.9	63.6	59.2	61.2
Flanner House Elementary	6 (02-03)	52.4	48.6	60.7	58.9	45.7	41.0
Christel House Academy	6 (02-03)	17.6	29.6	45.2	49.5	55.8	54.6
21st Century Charter/Fall Creek Academy	6 (02-03)	20.6	29.3	42.7	36.4	32.6	41.5

continued on next page

See page 7, second paragraph, for explanation of numbers shown in red and blue in Appendix F, above.

Name	Years in operation	02-03 ISTEP % passed both LA & Math all grades	03-04 ISTEP % passed both LA & Math all grades	04-05 ISTEP % passed both LA & Math all grades	05-06 ISTEP % passed both LA & Math all grades	06-07 ISTEP % passed both LA & Math all grades	07-08 ISTEP % passed both LA & Math all grades
LaPorte Community School Corp.							**71.8**
Renaissance Academy Charter	1 (07-08)						32.3
MSD Lawrence Township						**59.5**	**58.6**
Lawrence Early College High School	2 (06-07)					36.5	44.8
Noblesville Schools						**80.2**	**77.4**
Options Charter School (Noblesville)	2 (06-07)					19.4	30.4
Mt. Vernon Community School Corp.						**72.8**	**73.9**
Geist Montessori Academy	2 (06-07)					81.8	75.0
MSD Decatur Township					**56**	**57.8**	**58.2**
Decatur Discover Academy	3 (05-06)				18.7	20.0	23.0
School City of East Chicago					**53.5**	**41.5**	**41.7**
East Chicago Urban Enterprise Acad.	3 (05-06)				37.3	43.8	55.8
Richmond Community					**54.5**	**56.3**	**56**
Galileo Charter School	3 (05-06)				24.3	21.7	38.7
Southwest School Corp.				**54.4**	**56.3**	**59.1**	**60.1**
Rural Community Academy	4 (04-05)			50.0	54.5	41.0	55.4
Lafayette School Corp.				**55.0**	**53.6**	**51**	**53.6**
New Community School	6 (02-03)			70.0	60.0	n/a	70.8
Lake Central School Corp.			**76.3**	**68**	**76.8**	**77**	**75.1**
Campagna Academy	6 (02-03)		8.7	14.3	4.5	13.2	10.8
Carmel Clay Schools		**87.2**	**85.8**	**89.1**	**88.9**	**89.1**	**89.3**
Options Charter School (Carmel)	6 (02-03)	23.1	45.0	38.1	18.9	12.1	23.5
New Albany-Floyd County Consolidated School Corp.		**65.9**	**63.6**	**63.7**	**64.7**	**64.7**	**63.9**
Community Montessori	6 (02-03)	72.7	54.5	64.4	64.2	58.8	49.8

See page 7, second paragraph, for explanation of numbers shown in red and blue in Appendix F, above.