

**Geospatial Perspectives of School, Teacher, and Student Variables**  
*Focus on Recently De-accredited St. Louis City School District*

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**Abstract**

This research examines the relationships between a variety of school, teacher, and student variables at the building level of analysis across St. Louis region school districts. GIS is used to give geospatial perspective to variable relationships and reflect the social-cultural context of the neighborhood communities in which the schools are located. This ongoing research is part of The Center for Inquiry in Science Teaching and Learning (CISTL) St. Louis Regional Database Project that provides information to schools and the community about indicators of student attainment at elementary, middle, and high school levels.

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## **Geospatial Perspectives of School, Teacher, and Student Variables** *Focus on Recently De-accredited St. Louis City School District*

In his paper entitled *Conclusions and Controversies about the Effectiveness of School Resources*, Hanushek (1998) stated that “educational investments are very important to the U.S. economy” (p.11). It goes without saying that educational investments are important to any economy since the success of the economy relies heavily on the value of its human capital. Policy-makers, educators, and parents continually evaluate the multitude of resources needed for sustained educational investment and that are essential to schools, teachers, and students. Common sense beckons us to believe that there must be some relationship between the quality of education provided by neighborhood schools and the availability of school and teacher resources.

To date, a number of research studies have highlighted the importance of educational resources and have attempted to examine the nature of the relationship between various school inputs and student performance. Researchers such as Greenwald, Hedges, and Laine (1996), Hanushek (1997), Okpala (2002), and Okpala, Smith, and Jones (2000) have established a clear link between educational inputs and student academic achievement. Hanushek and Welch (2006) stress the relevance of such research to educational policy debates.

Debates of this nature are currently taking place in the St. Louis region where the Missouri State Board of Education has recently voted to de-accredit its largest school district, the St. Louis City Public School district, because of steady declines in academic performance, long-term financial instability, and turmoil in the district’s leadership (Missouri Department of Elementary and Secondary Education, March, 2007). The question of interest is, to what extent do educational investments, as measured by available school and teacher resources, differ for St. Louis City Public schools compared with other area schools? Specific questions include:

1. Do the *school resources* differ between St. Louis City schools and other St. Louis area schools at the elementary, middle, and high school levels?
2. Do the *teacher resources* differ between St. Louis City schools and other St. Louis area schools at the elementary, middle, and high school levels?
3. To what extent do *student performances* on the Missouri Assessment Program on Communication Arts, Mathematics, and Science tests differ for St. Louis City schools and other St. Louis area schools at the elementary, middle, and high school levels?

### **Methods**

The objective of this study was to compare the availability of important school and teacher resources for schools located in the St. Louis City school district with those for other St. Louis area school districts located in St. Louis, St. Charles, and Jefferson counties. The study also examined the variability of student performance data among the schools included in the study.

For this study, school, teacher, and student performance data were obtained for 260 elementary, 89 middle, and 63 high schools located in the St. Louis Metropolitan region. Data for the 2004-2005 school year were obtained from the Missouri Department of Elementary and Secondary Education (DESE) website (2007). School and teacher variables used in the study included:

- total school enrollment
- percentage of white student enrollment
- percentage of students receiving free/reduced lunch
- student/teacher ratio
- average teacher salary
- average teacher years of experience
- percentage of teachers with a regular teaching certificate
- percentage of teachers with no certificate
- percentage of teachers with master's degrees
- percentage of courses taught by highly qualified teachers
- student/administrator ratio
- average administrator salary

The indicators of student performance were:

- percentage of students scoring at the proficient and advanced levels on the MAP Communication Arts test
- percentage of students scoring at the proficient and advanced levels on the MAP Mathematics test
- percentage of students scoring at the proficient and advanced levels on the MAP Science test

In addition, at the high school level:

- percentage of students who graduated
- percentage of students who dropped out

The MAP tests measure students' progress relative to the Missouri Show-Me standards. Prior to the 2006 academic year, the MAP Communication Arts test was administered to students in the 3<sup>rd</sup>, 7<sup>th</sup>, and 11<sup>th</sup> grades and the Mathematics test was given to grades 4, 8, and 10. This study used the results of the 2005 MAP Communication Arts and Mathematics tests.

The MAP Science test, on the other hand, is given in the 3<sup>rd</sup>, 7<sup>th</sup>, and 10<sup>th</sup> grades. Since state funding for the science test was eliminated after 2002, schools took the MAP Science test on a voluntary basis. Therefore, some schools did not administer the science test in 2005 and did not have data for that year. Based on this fact, the percentage of students attaining at the proficient and advanced levels on the science examination were gathered for the years 2000 through 2005 and the median value was calculated to summarize each school's percentage of Proficient/Advanced students in science.

The MAP Communication Arts test assessed four major strands: Reading, Writing, Listening and Speaking, and Information Literacy. The MAP Mathematics test assessed six content strands: Number Sense, Geometric/Spatial Sense, Data Analysis/Probability, Patterns & Relationships, Mathematical Systems, and Discrete Mathematics. The MAP Science test assessed eight content areas: Matter and Energy, Force, Motion, and Mechanical Energy, Living Systems, Ecology, Earth Systems, The Universe, Scientific Inquiry, and Scientific Relevance.

### *Data Analysis*

Independent sample t-tests were used to evaluate mean differences in the school, teacher, and student variables between St. Louis City schools and other schools located in the St. Louis region. Data were analyzed at the school level and weighted by enrollment at each school. In order to understand the variation in the educational resources and student attainment across the school districts, the data were given spatial and geographical perspective using GIS mapping.

### **Results**

Tables 2, 3, and 4 present the mean and standard deviation (*SD*) for St. Louis City schools vs. the mean and *SD* for other schools located in neighboring St. Louis area districts. The means were weighted by school enrollment. In St. Louis City there were 58 elementary schools, 28 middle schools, and 15 high schools. For the comparison schools outside of St. Louis City, there were 202 elementary schools, 61 middle schools, and 49 high schools. At the elementary level, Table 2 shows that the mean differences were statistically significant for all variables except student/teacher ratio and teachers' average years experience. At the middle school level, all mean differences were statistically significant (Table 3). At the high school level, only the mean difference for teachers' average years experience was not significant (Table 4).

### **School Resources**

The average student enrollment data displayed in Figure 1, show lower enrollment at the elementary, middle, and high school levels for St. Louis City schools compared with schools in the other parts of the region. The average number of students enrolled in other regional high schools was approximately 2 times higher than the average enrollment in St. Louis City high schools. Further comparison of the data by ethnicity (Figure 2, right section) showed lower percentages of white

students in St. Louis City schools (14% vs. 65% at the elementary school level, 15.4% vs. 68.3% at the middle school level, and 15.6% vs. 70.6% at the high school level). Figure 3 shows the geospatial distribution of schools by enrollment and ethnicity. Larger pie charts indicate higher enrollment for those schools as well as break out the percentages of white and minority students. The elementary school map shows a concentration of high percentages of minority students (between 90% to 100%) in the northwestern part of St. Louis city while the southwestern part of the city had a few schools in which over 50% of the students were white.

St. Louis City schools had significantly higher percentages of students participating in the Free/Reduced Lunch program (87.6% vs. 34.6% at the elementary school level, 82.5% vs. 29.7% at the middle school level, and 76.6% vs. 20.7% at the high school level). The left section of Figure 2 shows this direct comparison between St. Louis City Schools vs. other area schools. Figure 4 maps the schools by enrollment and percentage of students receiving free or reduced lunches. Of the 58 elementary schools in the city, 52 have over 80% of the students enrolled in the free or reduced lunch program.

Figure 5 presents information about student/administrator and student/teacher ratios. St. Louis City schools had smaller student/administrator ratios (274:1, 246:1, and, 277:1 at the elementary, middle, and high school levels, respectively). Figure 6 shows the student/administrator ratios spatially throughout the districts.

St. Louis City middle and high schools had significantly larger student/teacher ratios than other St. Louis area schools (24 vs. 19 at the middle school level and 25 vs. 21 at the high school level) (Figure 5). In addition to more students per teacher, there were large variances in the students/teacher ratios among St. Louis City schools. (7.58 *SD* for elementary schools, 9.54 *SD* for middle schools, and 6.41*SD* for high schools).

Figure 7 and 8 present a comparison of administrator salaries in the St. Louis City School District vs. salaries at other schools in the region. Large and significant differences were observed for administrator salaries (\$18,581, \$17,546, and \$13,996 lower for St. Louis City schools at the elementary, middle, and high school levels, respectively). Average administrator incomes for almost all of the St. Louis city schools ranged in the lower levels, that is between \$29,305 to \$70,000. Only two elementary schools, one middle school, and one high school had administrator incomes that were within the highest range of \$90,000 and more.

### **Teacher Resources**

Teacher salaries were lower for St. Louis City schools at the elementary, middle, and high school levels (\$8,414, \$8,916, and \$8,199, respectively) than other area schools (Figure 7). Teacher salaries are spatially mapped in Figure 9. None of the St. Louis city schools had average teacher salaries that were greater than \$50,000. Considering the big difference in teacher salaries, it is important to note that the average years of teacher experience were fairly similar for St. Louis City teachers compared to those teachers in other regional schools (Figure 10). Differences in teacher salaries may be partly attributed to the comparatively higher percentage of teachers with master's degrees in the other area schools than in the city schools (62.5% vs. 37.2%, for elementary schools, 60.4% vs. 33.1% for middle schools, and 62.7% vs. 44.9% for high schools) (Figure 11).

The differences in percentages of master's degrees can be seen clearly in the spatial presentation (Figure 12). For all of the St. Louis City schools, the average percentage of teachers with master's degrees was less than 70%. Also, compared to the St. Louis City schools, the other area schools in the region had higher percentages of the courses being taught by highly qualified teachers (Figure 11).

The data about certification status of teachers showed significantly lower percentages and wider variability in the percentages of teachers with regular certificates in St. Louis City schools compared with other area schools (Figure 13). The spatial distribution of teachers with regular certificates is presented in Figure 14. The maps clearly show that most of the city middle and high schools had between 58% and 94% of teachers with regular certification, whereas the percentages of teachers with regular certificates in almost all the middle and high schools in the other parts of region were greater than 94%.

The difference in the percentages of teachers with no certificates working in St. Louis City schools and other area schools were small but significant (Figure 13). The variance for the percentage of teachers without certificates among the city schools was fairly large at all three levels, and at the elementary school level the variance was greater than the mean (a mean of 3.8 and 4.5 *SD*). The variance within the St. Louis City schools is found in Figure 15.

## **Student Performance**

Student performance data in Figure 16 reveal large and significant differences in the average percentages of students at the proficient/advanced levels on the MAP Communication Arts, Mathematics, and Science tests. At all three school levels, St. Louis City schools had lower percentages of proficient/advanced students than the other area schools.

### Communication Arts

At the elementary school level, an average of 29.3% of St. Louis City students scored at the proficient/advanced levels vs. 38.8% of other area students (9.5 percentage points difference). For middle schools, the difference was 25.4 percentage points lower for St. Louis City students (36% vs. 10.6%). At the high school level, the difference was 21.4 percentage points lower for St. Louis City



students (26.8% vs. 5.4%). Figure 17 maps the variance between the schools and clearly shows the cluster of schools with lower percentages of proficient/advanced students in Communication Arts.

### Mathematics

At the elementary school level, an average of 31.2% of St. Louis City students scored at the proficient/advanced levels vs. 46.9% of other area students (15.7 percentage points difference). For middle schools, the difference was 12.5 percentage points lower for St. Louis City students (18.7% vs. 6.2%). At the high school level, the difference was 16.5 percentage points lower for St. Louis City students (19.9% vs. 3.4%). Figure 18 maps the variance between the schools and clearly shows the cluster of schools with lower percentages of proficient/advanced students in Mathematics.

### Science

At the elementary school level, an average of 33.6% of St. Louis City students scored at the proficient/advanced levels vs. 50.7% of other area students (17.1 percentage points difference). For middle schools, the difference was 14.1 percentage points lower for St. Louis City students (17.2% vs. 3.1%). At the high school level, the difference was 6.8 percentage points lower for St. Louis City students (7.8% vs. 1.0%). The point with the science test data is portrayed in Figure 19 that shows a similar spatial pattern to Communication Arts and Mathematics, but at the same time the overall average percentages of proficient/advanced students were much lower at both middle and high school levels across all districts in the region.

### Graduation and Dropout Rates

Comparing graduation and dropout rates between St. Louis City and other area high schools also showed significant disparities (Figure 20). Figure 21 displays wide variation in graduation and dropout rates across St. Louis City schools (15.6 *SD* and 11.7 *SD*, respectively). On the average, a greater percentage of St. Louis City high school students tended to dropout (16.3% vs. 2.7%) and

also had a lower graduation percentage rate (64.7% vs. 88.8%) than the other area high school students.

### **Discussion**

Since the St. Louis City school district was de-accredited by the Missouri State Board of Education in March 2007, it is important to describe how it differs from other districts in the St. Louis metro region on key student, teacher, and school variables. Reasons cited for the de-accreditation were declines in academic performance, long-term financial instability, and turmoil in the district's leadership (DESE, March 22, 2007).

In addition to having lower percentages of students scoring at the proficient/advanced levels on the Missouri MAP test in Communication Arts, Mathematics, and Science, these findings show that the St. Louis City district is different on a number of student, teacher, and school variables from the other districts and schools in the St. Louis metro region. These differences are summarized in Table 1.

From the positive perspective, St. Louis City elementary schools on the average have smaller enrollment than the average of the region's other elementary schools. Also, St. Louis City schools have similar student/teacher ratios and the teachers have similar average years of experience as compared to other regional elementary schools.

From data reported at the district level (DESE, 2007), the St. Louis City district spent \$4,001 instructional dollars per student, while the average for the other St. Louis area districts was \$4,186 ( $SD = \$892$ ). This average difference in money spent per student on instruction does not appear to be very large from a practical standpoint.

**Table 1. Summary of School, Teacher, and Student Variables Comparing St. Louis City School Districts with Other Area Districts**

	<b>St. Louis City</b>	<b>Districts are similar</b>	<b>Other Districts</b>
Smaller enrollment	X		
Favorable student/teacher ratio - elementary		X	
Favorable student/teacher ratio – middle & high			X
Teachers' average years experience		X	
Instructional dollars per student		X	
Higher percentage free/reduced lunches	X		
Lower percentage of master's degrees	X		
Fewer courses taught by highly qualified teachers	X		
More uncertified teachers	X		
Fewer teachers with regular certificates	X		
Lower teacher salaries	X		
More administrators per students	X		
Lower graduation rates	X		
Higher dropout rates	X		
Higher percentage of proficient students on MAP Science test			X
Higher percentage of proficient students on MAP Communication Arts test			X
Higher percentage of proficient students on MAP Mathematics test			X

On the downside, St. Louis City schools at all levels have higher poverty rates indicated by significantly higher percentages of students receiving free/reduced lunches. St. Louis City schools have fewer teachers with master's degrees, fewer courses taught by highly qualified teachers, more uncertified teachers, fewer teachers with regular certificates, lower teacher salaries, and more administrators per students. At the middle and high school levels class sizes are larger with higher student/teacher ratios. St. Louis City high schools have lower graduation rates and higher drop out rates. So while St. Louis City schools have lower and less favorable standings on many of the school and teacher variables, they also have fewer students classified as proficient on the Missouri MAP tests in Communication Arts, Mathematics, and Science and at all three levels of elementary, middle, and high school.

## References

- Greenwald, R., Hedges, L. V., & Laine, R. D. (1996). The effect of school resources on student achievement. *Review of Educational Research, 66*(3), 361-396.
- Hanushek, E. (1997). Assessing the effects of school resources on student performance: An update. *Educational Evaluation and Policy Analysis, 19*(2), 129-146.
- Hanushek, E. A. (1998). Conclusions and controversies about the effectiveness of school resources. *Federal Reserve Bank of New York Economic Policy Review*, p. 11-27.
- Hanushek, E. A., & (2006). School resources. In E. A. Hanushek and S. Welch (Eds.), *Handbook of the Economics of Education* (pp. 2-44). Amsterdam: Elsevier.
- Missouri Department of Elementary and Secondary Education (2007). State board de-accredits St. Louis public schools; Businessman nominated to lead transition board. *News Release, 41*(24). Retrieved April 4, 2007 from <http://www.dese.mo.gov/news/2007/SLPS/accreditation.htm>.
- Missouri Department of Elementary and Secondary Education. (2007). Web site: <http://dese.mo.gov/schooldata/>
- Okpala, C. O. (2002). Educational resources, student demographics, and achievement scores. *Journal of Education Finance, 27*, 885-907.
- Okpala, C. O., Smith, F., & Jones, E. B. (2000). A clear link between school and teacher characteristics, student demographics, and student achievement. *Education, 120*(3), 487-494.

**Table 2: Comparison of St. Louis City Elementary Schools with Other Area Schools**

	St. Louis City School District (58 elementary schools, 19,391 students)		Other St. Louis Area School Districts (202 elementary schools, 94,049 students)		* $p < .05$ Independent t-test
<b>School and Teacher Data</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean Difference</b>
Enrollment	334	172.52	465	162.90	131*
Percent white enrollment	14.05	20.08	64.96	32.20	50.91*
Percent Free/Reduced lunch	87.60	17	34.61	26.42	52.99*
Student/Administrator ratio	273.71	95.39	371.70	114.59	97.99*
Student/Teacher ratio	18.16	7.58	18.55	2.07	0.39
Administrator salary	\$67,150	\$13,707	\$85,732	\$9,836	\$18,582*
Teacher salary	\$39,416	\$3,168	\$47,829	\$5,226	\$8,413*
Teacher experience	11.70	4.91	12.45	2.64	0.75
Percent of teachers with master's degree	37.19	13.08	62.50	15.55	25.31*
Percent of Teachers with regular certification	91.33	8.86	99.20	1.95	7.90*
Percent of teachers with no certification	3.84	4.46	0.24	0.98	3.60*
Percent of courses taught by highly qualified teachers	91.90	8.88	99.41	1.48	7.51*
Science: Percent of students at proficient/advanced levels	33.60	23.52	50.73	17.53	17.13*
Communication Arts: Percent of students at proficient/advanced levels	29.32	22.47	38.84	15.56	9.52*
Mathematics: Percent of students at proficient/advanced levels	31.22	19.70	46.95	16.93	15.73*

Data source: DESE, Missouri Department of Elementary and Secondary Education. (2007). Web site: <http://dese.mo.gov/schooldata/>  
Data are weighted by school enrollment.

**Table 3: Comparison of St. Louis City Middle Schools with Other Area Schools**

	St. Louis City School District (28 middle schools, 11,255 students)		Other St. Louis Area School Districts (61 middle schools, 46,761 students)		* $p < .05$ Independent t-test
<b>School and Teacher Data</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean Difference</b>
Enrollment	402	213.09	767	284.74	365*
Percent white enrollment	15.43	16.85	68.35	28.61	52.92*
Percent Free/Reduced lunch	82.45	20.09	29.72	21.85	52.73*
Student/Administrator ratio	245.54	124.22	286.23	56.36	40.69*
Student/Teacher ratio	23.64	9.54	18.54	2.60	5.1*
Administrator salary	\$64,842	\$8,994	\$82,388	\$6,285	\$17,546*
Teacher salary	\$38,344	\$2,934	\$47,260	\$5,246	\$8,916*
Teacher experience	10.00	3.75	11.90	2.44	1.90*
Percent of teachers with master's degree	33.08	12.42	60.38	13.52	27.30*
Percent of Teachers with regular certification	80.39	8.55	98.68	2.33	18.29*
Percent of teachers with no certification	7.76	5.37	0.25	0.67	7.51*
Percent of courses taught by highly qualified teachers	86.37	9.04	98.33	2.23	11.96*
Science: Percent of students at proficient/advanced levels	3.08	4.92	17.24	9.50	14.16*
Communication Arts: Percent of students at proficient/advanced levels	10.57	11.21	36.04	14.23	25.47*
Mathematics: Percent of students at proficient/advanced levels	6.21	9.43	18.72	10.21	12.51*

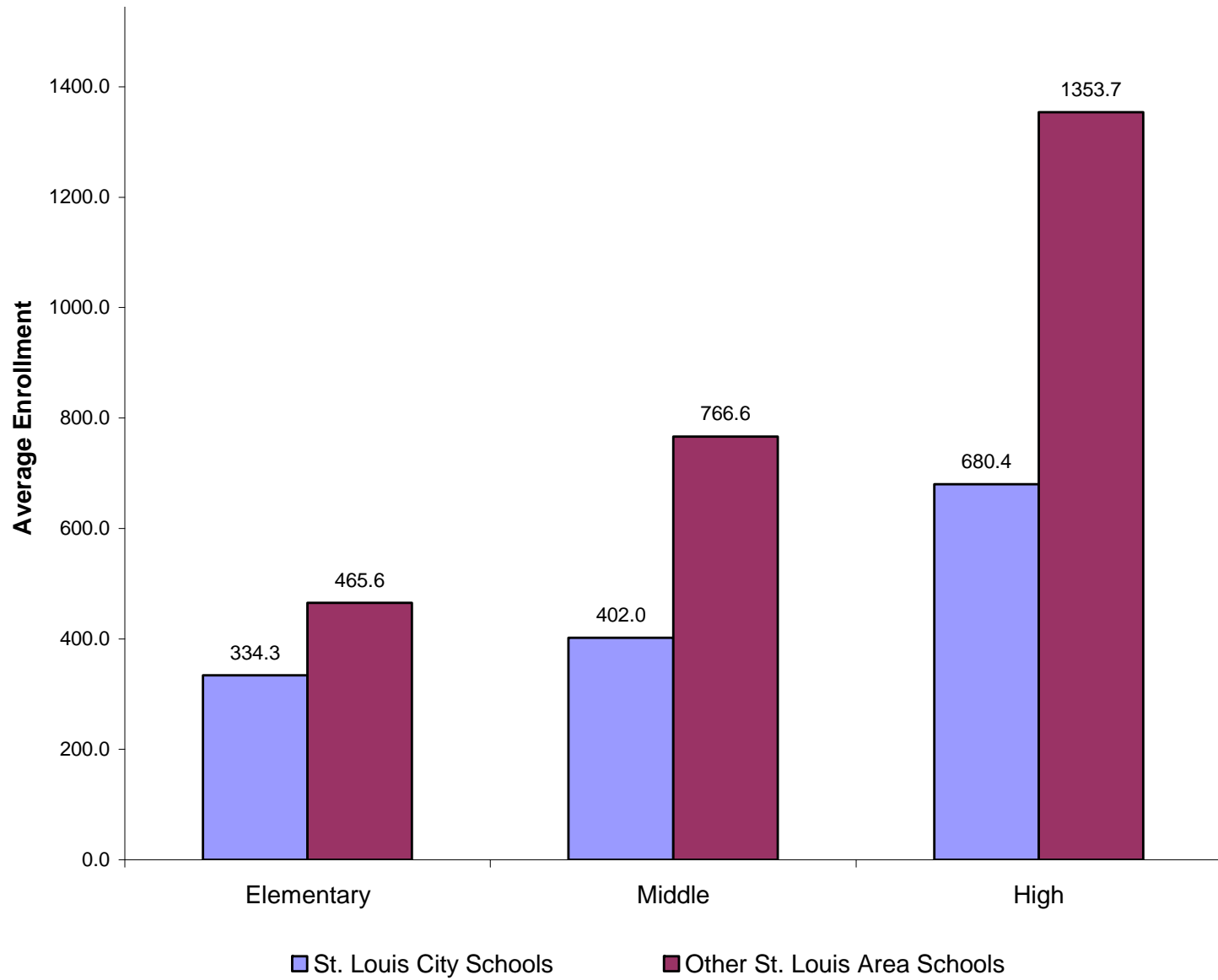
Data source: DESE, Missouri Department of Elementary and Secondary Education. (2007). Web site: <http://dese.mo.gov/schooldata/>  
Data are weighted by school enrollment.

**Table 4: Comparison of St. Louis City High Schools with Other Area Schools**

	St. Louis City School District (15 high schools, 10,206 students)		Other St. Louis Area School Districts (49 high schools, 66,329 students)		* $p < .05$ Independent t-test
<b>School and Teacher Data</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean Difference</b>
Enrollment	680	521.08	1,354	681.08	674*
Percent white enrollment	15.62	15.05	70.60	28.45	54.98*
Percent Free/Reduced lunch	76.64	14.87	20.68	17.53	55.96*
Student/Administrator ratio	277.35	70.06	337.05	76.70	59.70*
Student/Teacher ratio	25.05	6.41	21.15	3.48	3.9*
Administrator salary	\$74,043	\$7,683	\$88,039	\$6,856	\$13,996*
Teacher salary	\$41,046	\$1,894	\$49,244	\$4,828	\$8,198*
Teacher experience	12.21	2.76	12.56	2.11	0.35
Percent of teachers with master's degree	44.94	9.30	62.65	10.16	17.71*
Percent of Teachers with regular certification	80.60	9.57	97.92	2.35	17.32*
Percent of teachers with no certification	3.83	3.58	0.33	1.14	3.5*
Percent of courses taught by highly qualified teachers	90.83	5.05	98.00	1.68	7.17*
Science: Percent of students at proficient/advanced levels	1.04	4.07	7.76	4.75	6.72*
Communication Arts: Percent of students at proficient/advanced levels	5.37	11.73	26.83	10.44	21.46*
Mathematics: Percent of students at proficient/advanced levels	3.44	7.71	19.90	10.33	16.46*

Data source: DESE, Missouri Department of Elementary and Secondary Education. (2007). Web site: <http://dese.mo.gov/schooldata/>  
Data are weighted by school enrollment.

**Figure 1**  
**Average Student Enrollment**  
St. Louis City Schools Vs. Other St. Louis Area Schools





**Figure 2**  
**Percentage of Students Receiving Free or**  
**Reduced-Price Lunches and**  
**Percentage Minority Enrollment**  
 St. Louis City Schools Vs. Other St. Louis Area Schools

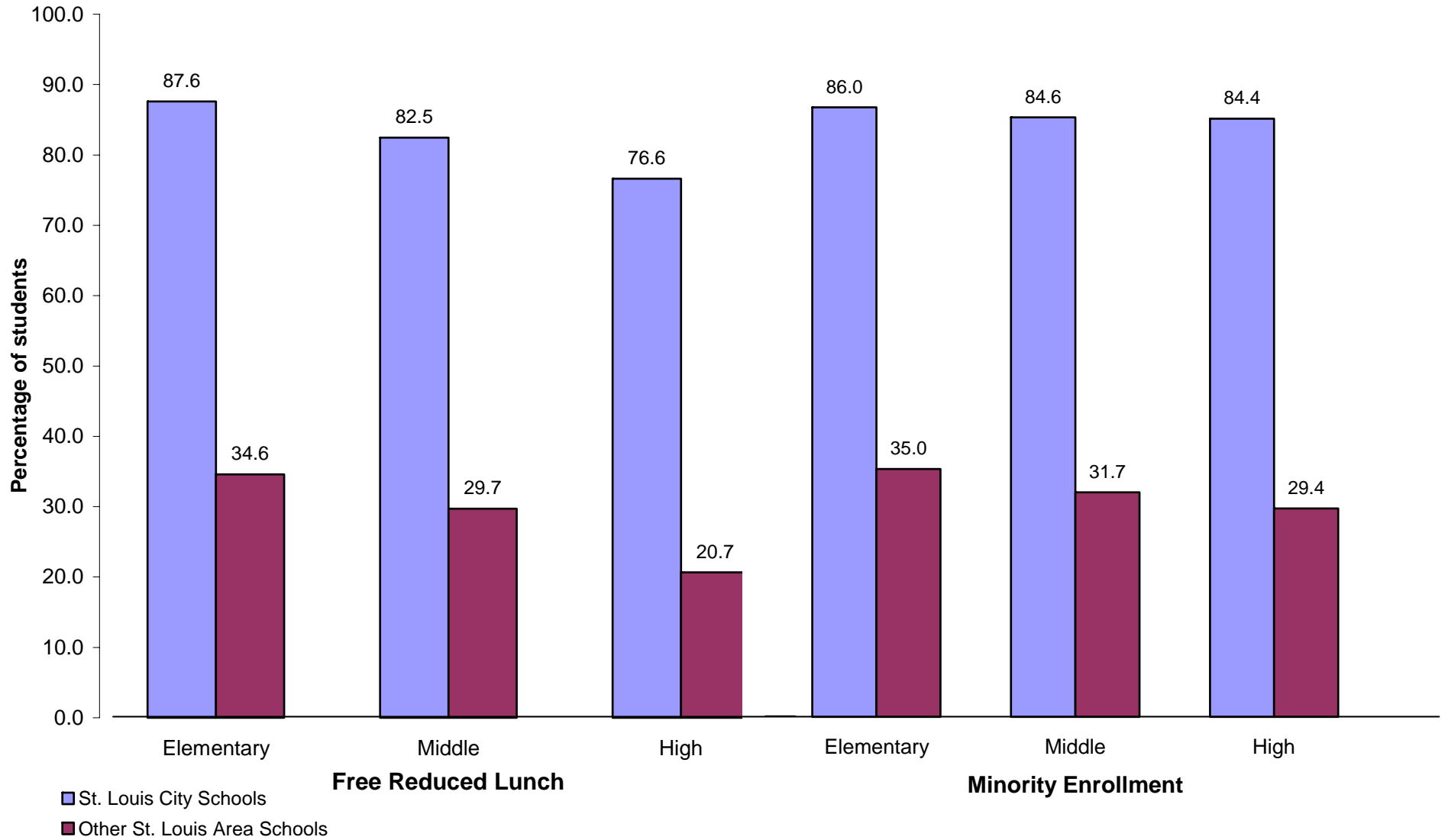


Figure 3

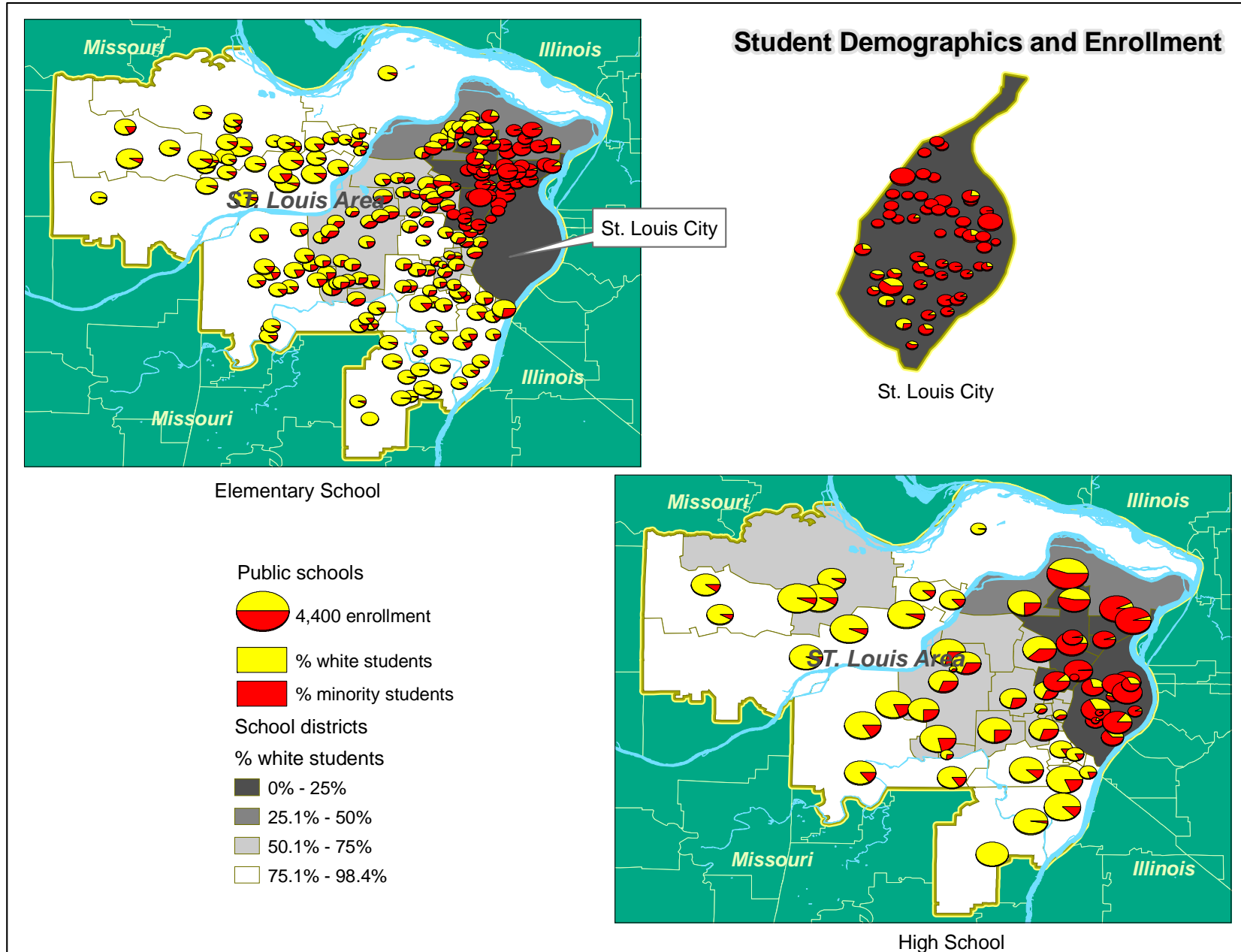
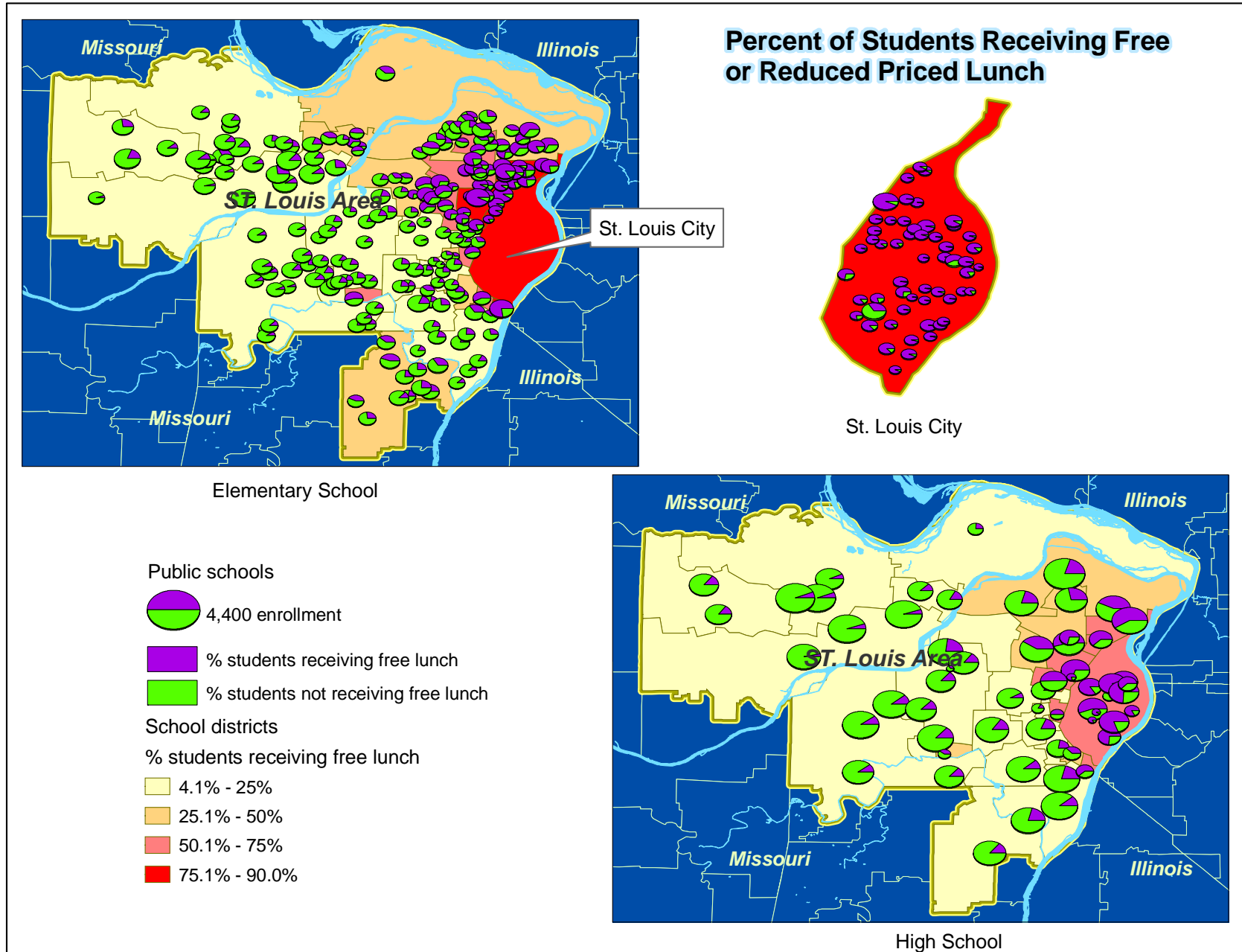


Figure 4



**Figure 5**  
**Student/Teacher Ratios**  
**Student/Administrator Ratios**  
 St. Louis City Schools Vs. Other St. Louis Area Schools

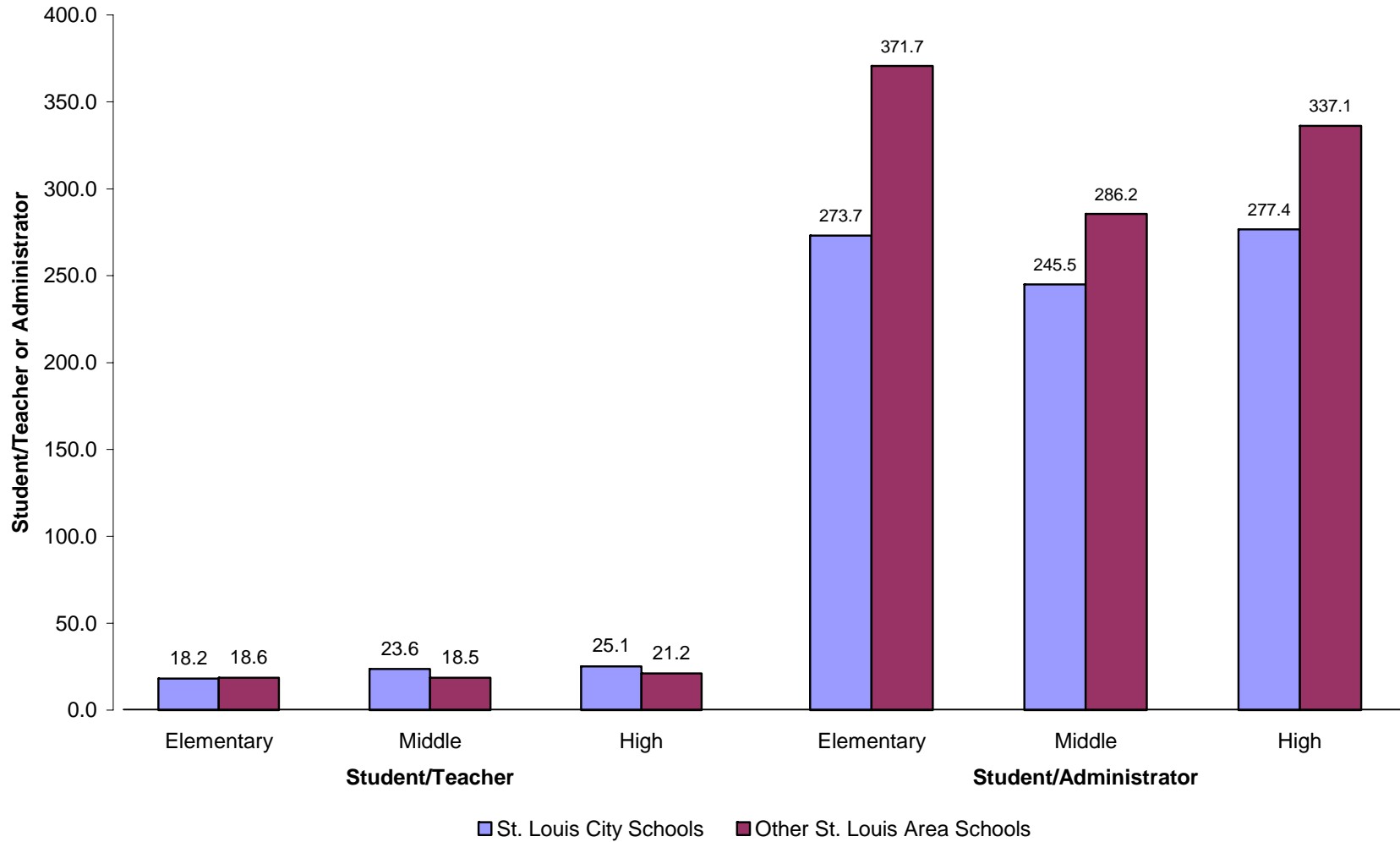
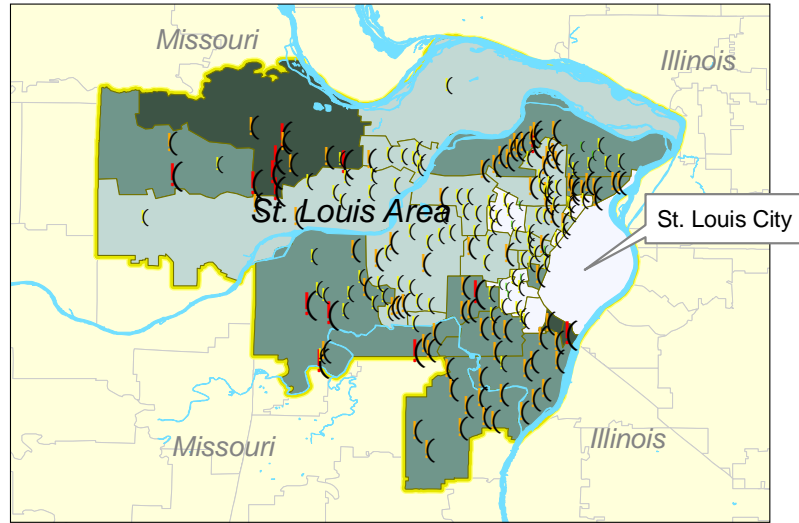
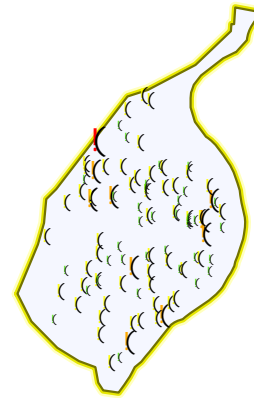


Figure 6

Students Per Administrator



Elementary Schools



St. Louis City

Elementary School

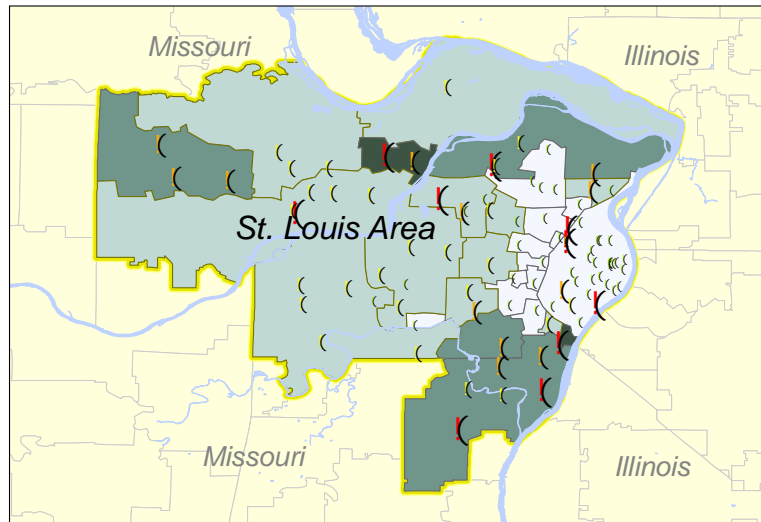
Public schools School districts

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- ( 201 - 350    □ 251 - 350
- ( 351 - 500    □ 351 - 450
- ( 501 - 899    □ 451 - 899

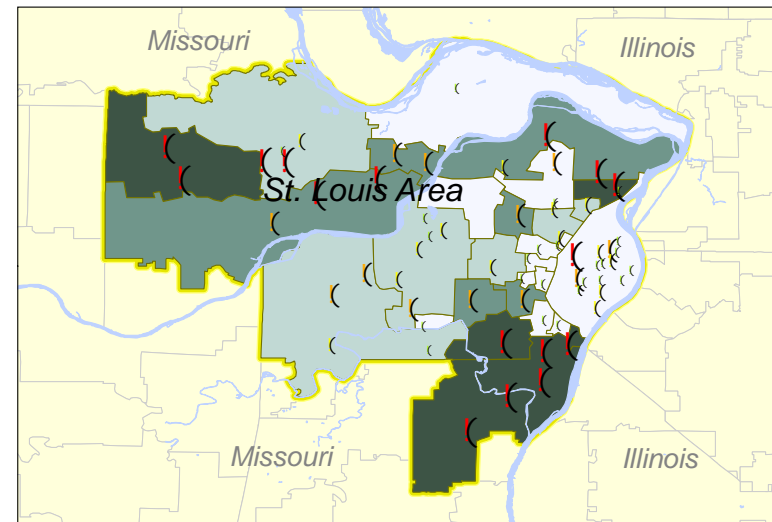
Middle and High School

Public schools School districts

- ( 0 - 250    □ 86 - 250
- ( 251 - 300    □ 251 - 300
- ( 301 - 350    □ 301 - 350
- ( 351 - 509    □ 351 - 509



Middle Schools



High Schools

**Figure 7**  
**Average Administrator Salaries**  
**Average Teacher Salaries**  
 St. Louis City Schools Vs. Other St. Louis Area Schools

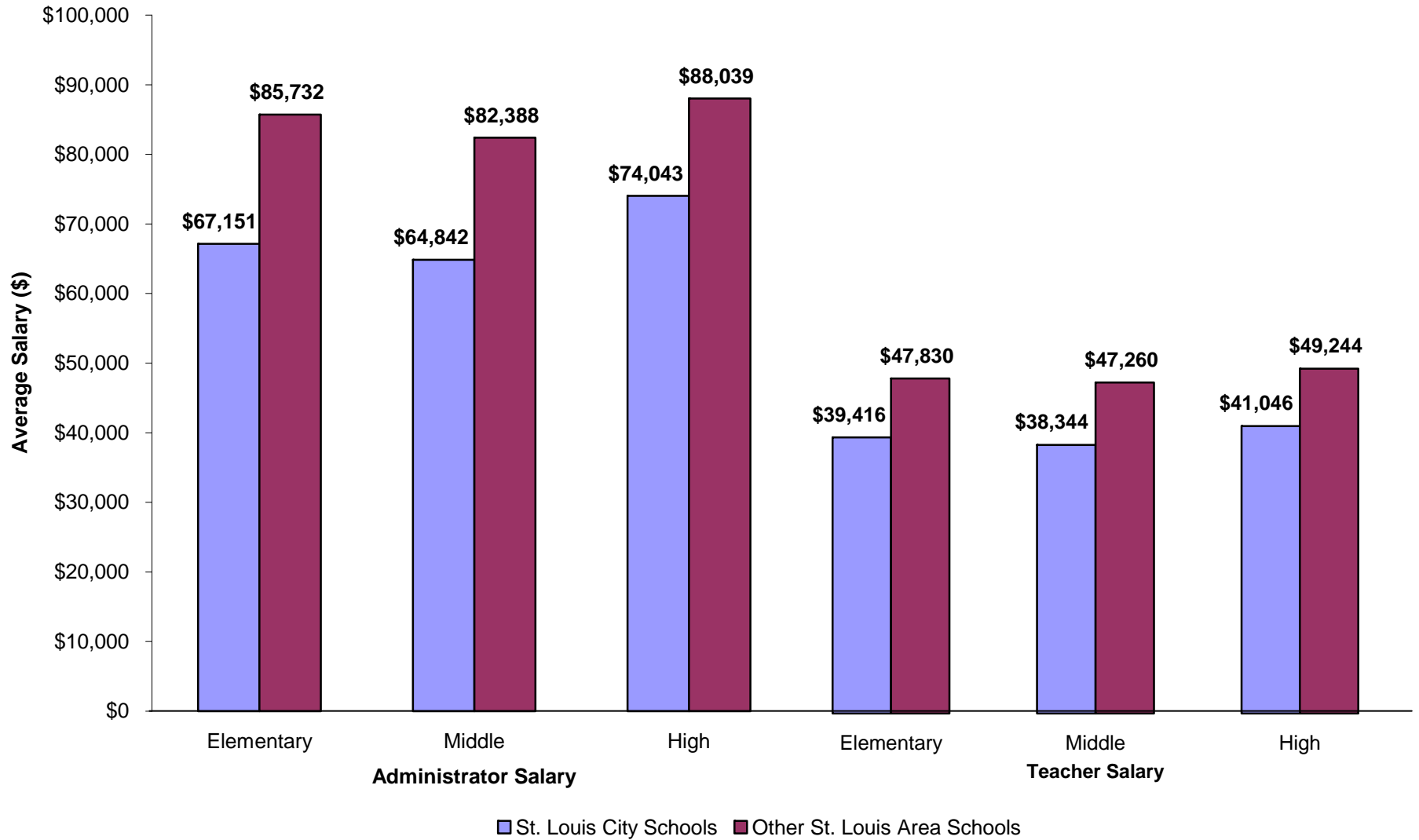
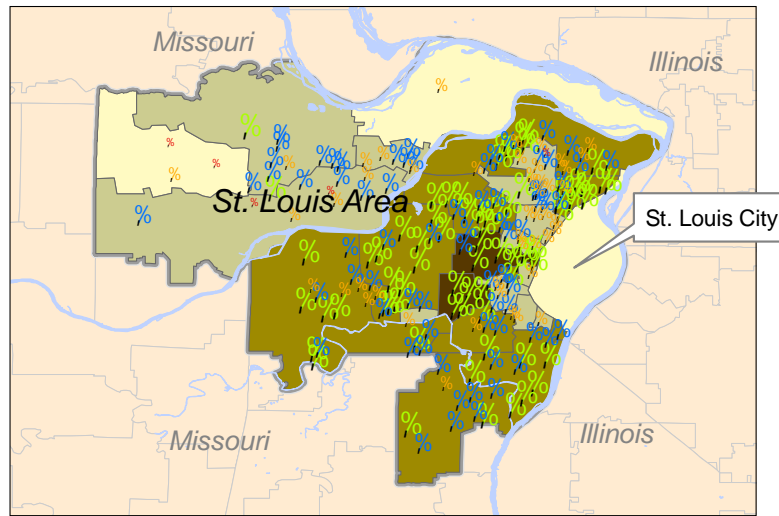
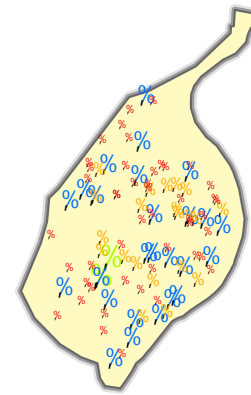


Figure 8

### Average Administrator Salary



Elementary School



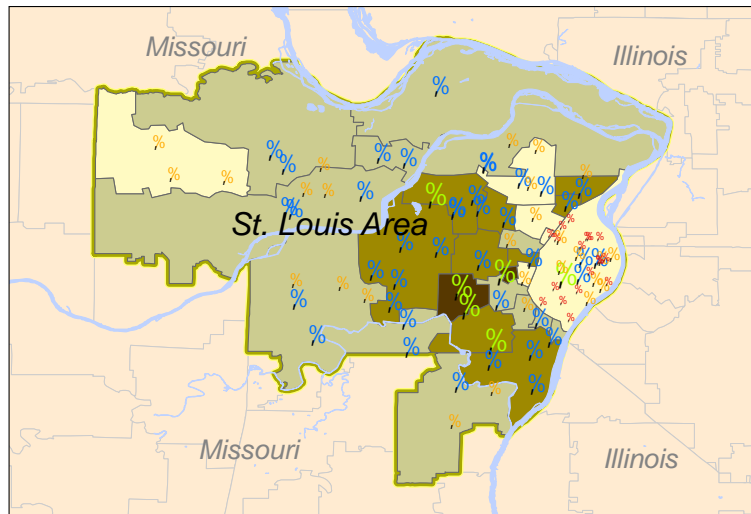
St. Louis City

Public schools

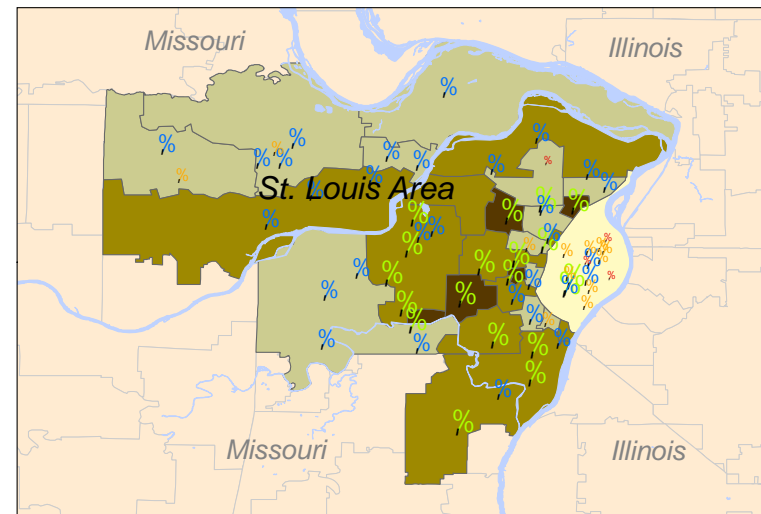
- \* \$29,305.00 - \$70,000.00
- % \$70,000.01 - \$80,000.00
- % \$80,000.01 - \$90,000.00
- % \$90,000.01 - \$114,855.00

School districts

- \$57,500.00 - \$75,000.00
- \$75,000.01 - \$85,000.00
- \$85,000.01 - \$95,000.00
- \$95,000.01 - \$112,493.00



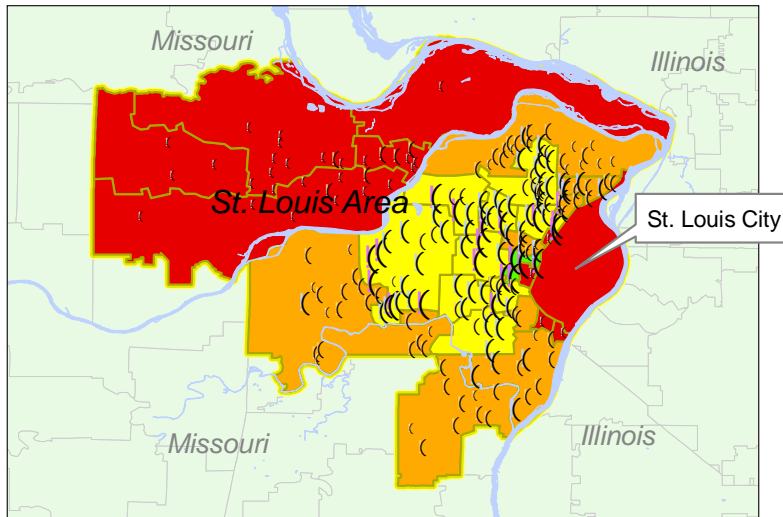
Middle School



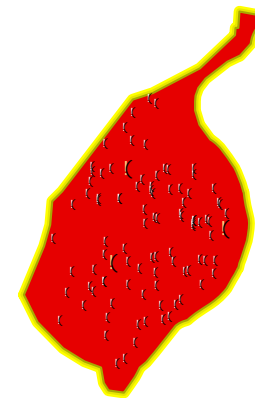
High School

Figure 9

### Average Teacher Salary



Elementary School



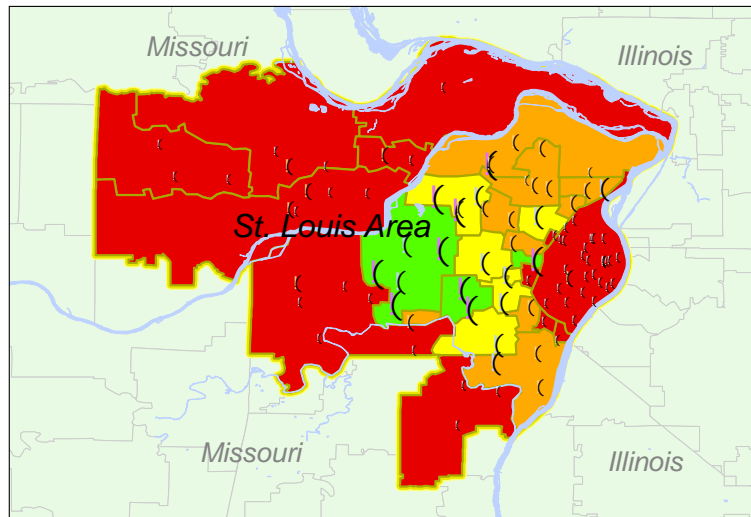
St. Louis City

Public schools

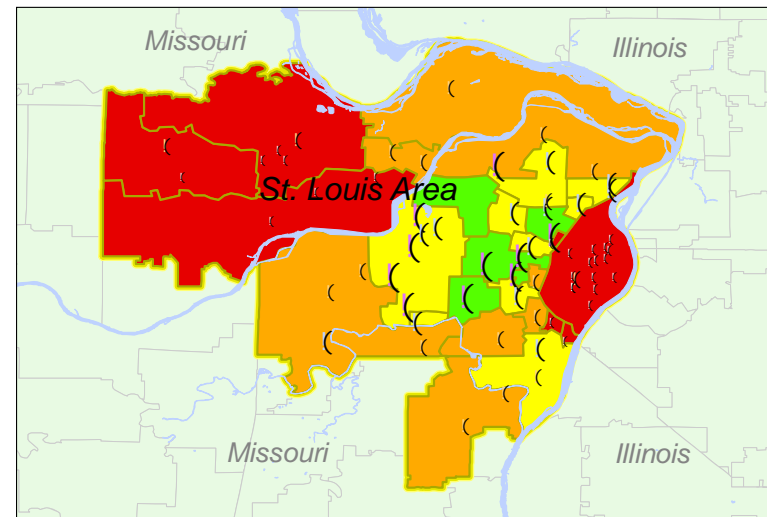
- ( \$31,426.00 - \$45,000.00
- ( \$45,000.01 - \$50,000.00
- ( \$50,000.01 - \$55,000.00
- ( \$55,000.01 - \$63,793.00

School districts

- \$38,717.00 - \$45,000.00
- \$45,000.01 - \$50,000.00
- \$50,000.01 - \$55,000.00
- \$55,000.01 - \$59,363.00



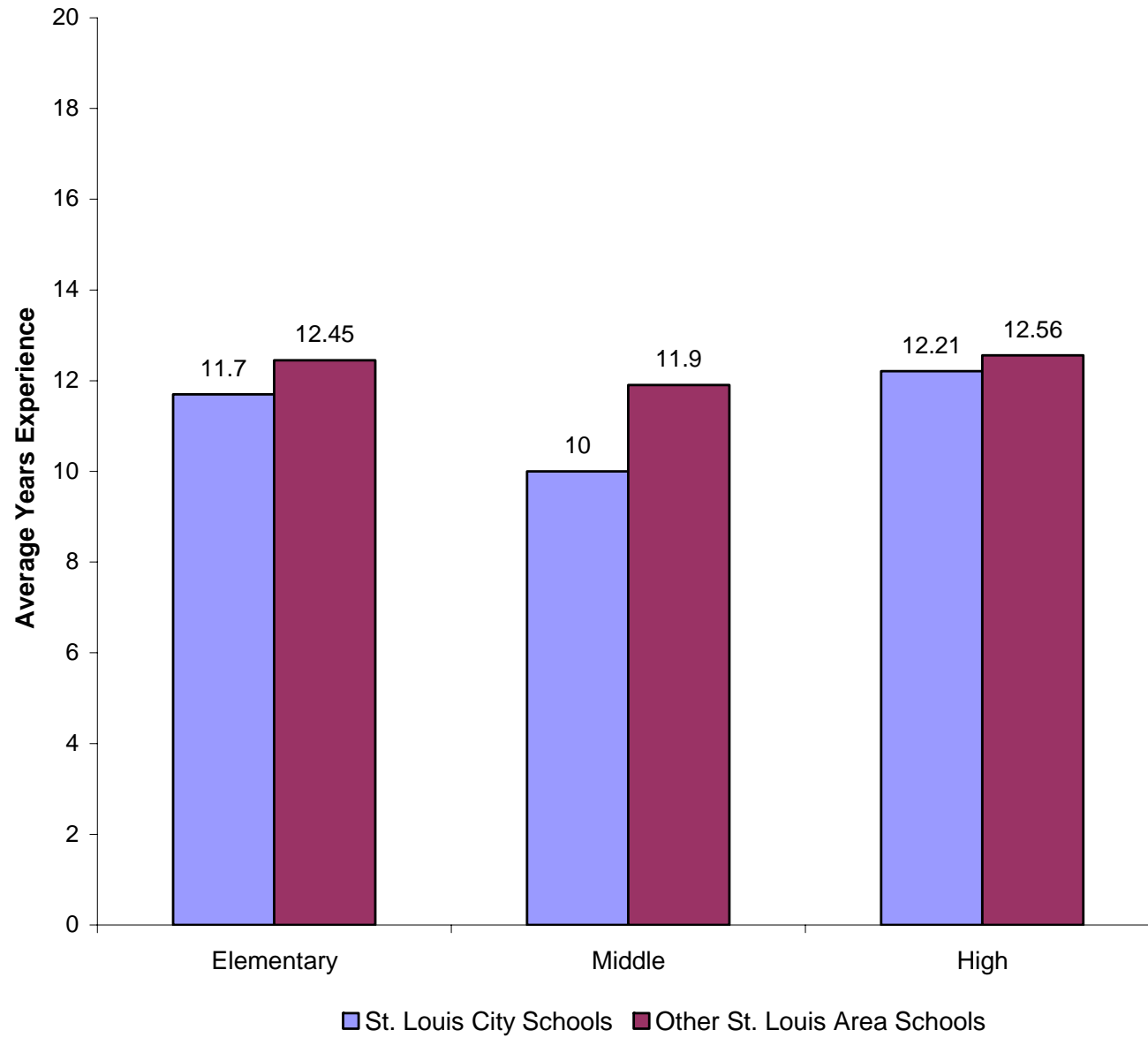
Middle School



High School



**Figure 10**  
**Average Teacher Years of Experience**  
St. Louis City Schools Vs. Other St. Louis Area Schools



**Figure 11**  
**Percentage of Courses Taught by Highly Qualified Teachers**  
**and Teachers with Master's Degrees**  
 St. Louis City Schools Vs. Other St. Louis Area Schools

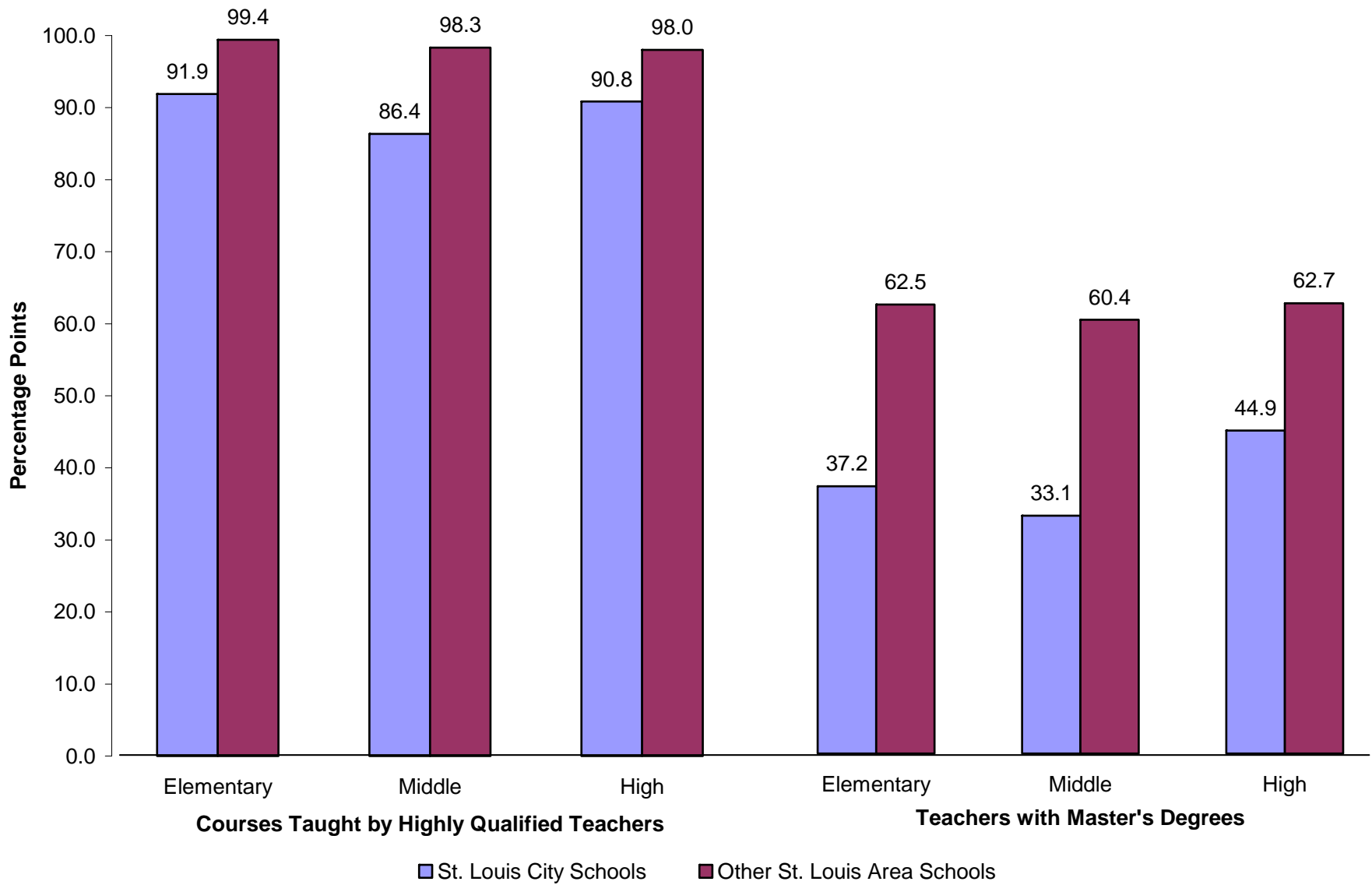
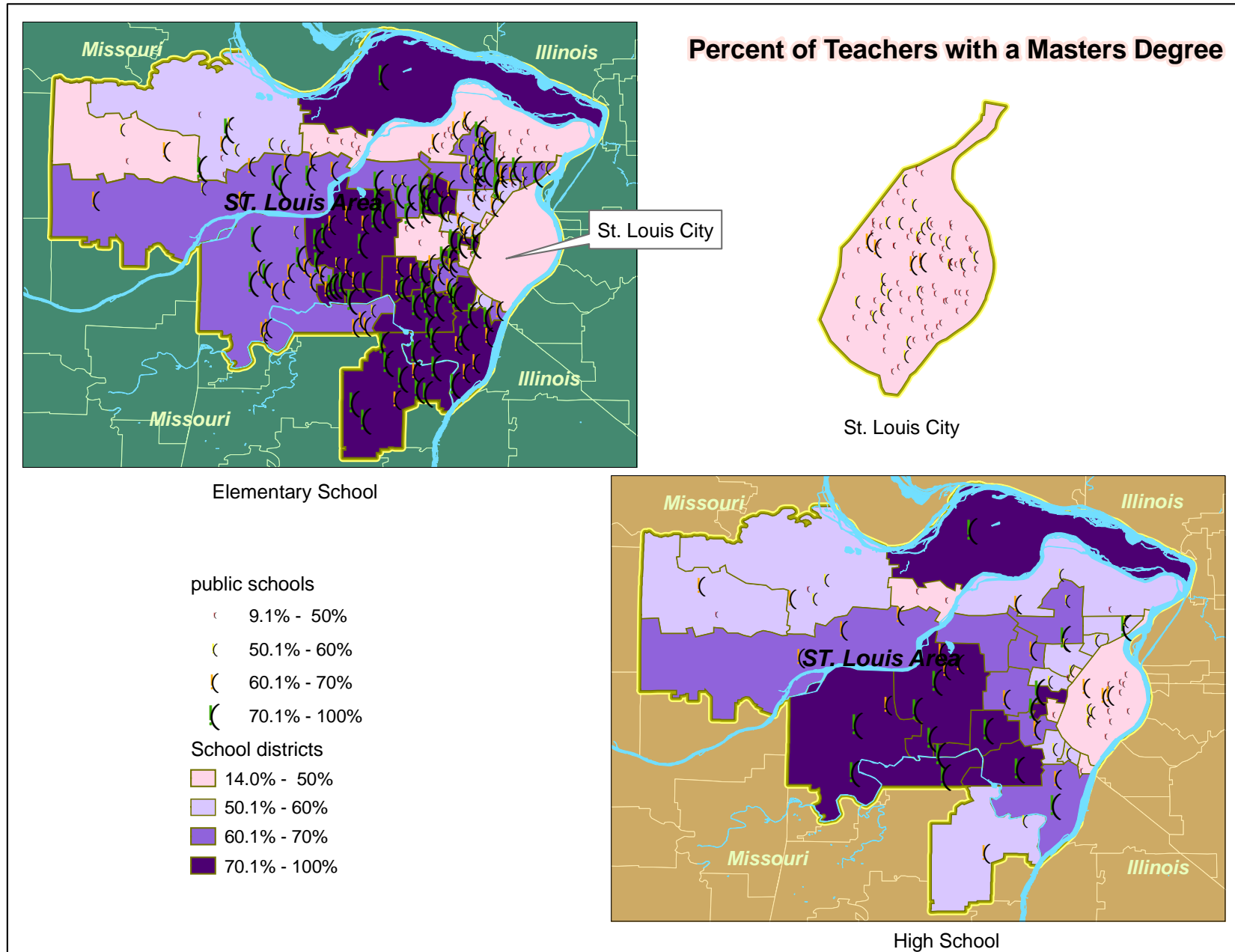


Figure 12



**Figure 13**  
**Percentage of Teachers with Regular or No Certificates**  
 St. Louis City Schools Vs. Other St. Louis Area Schools

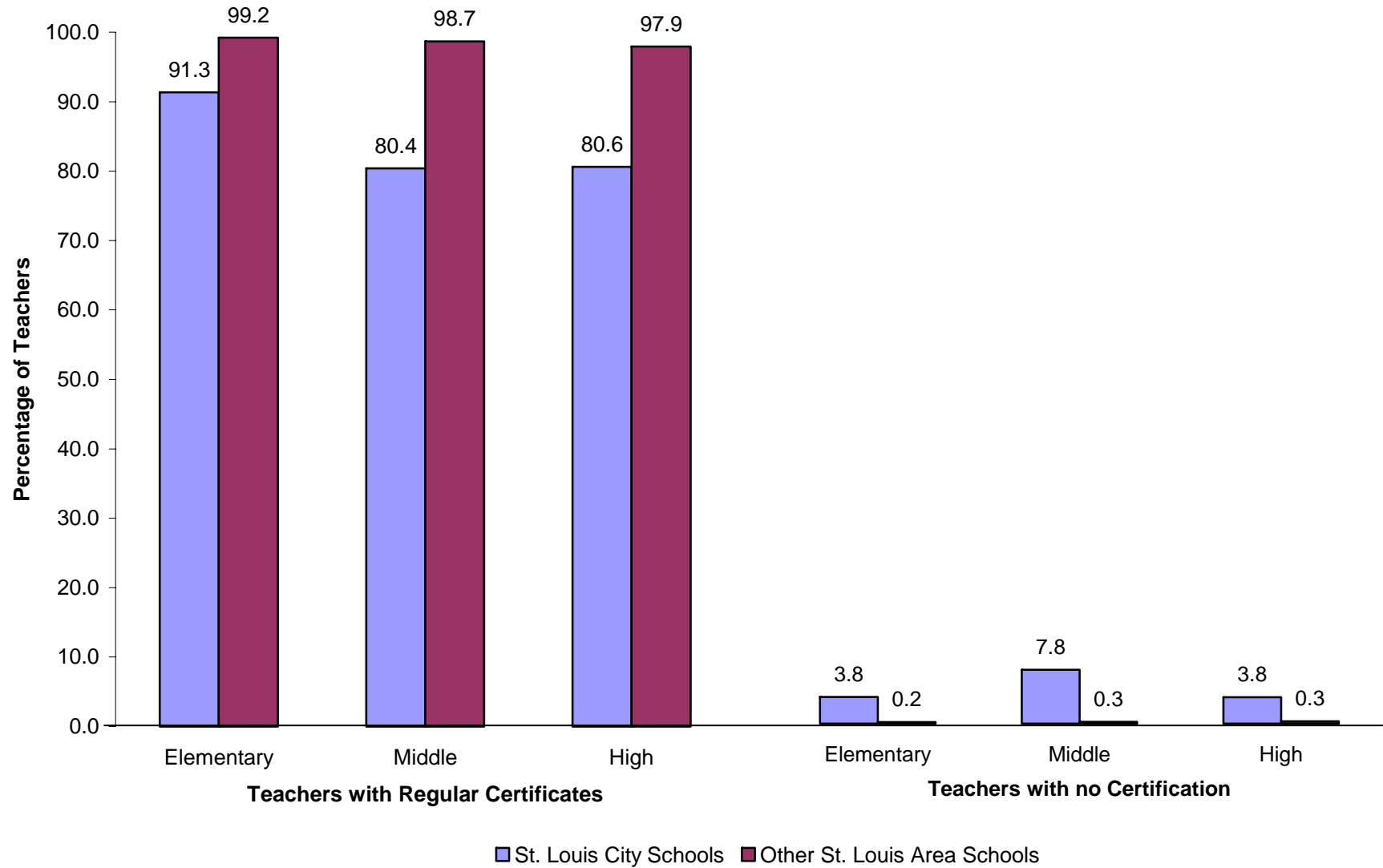
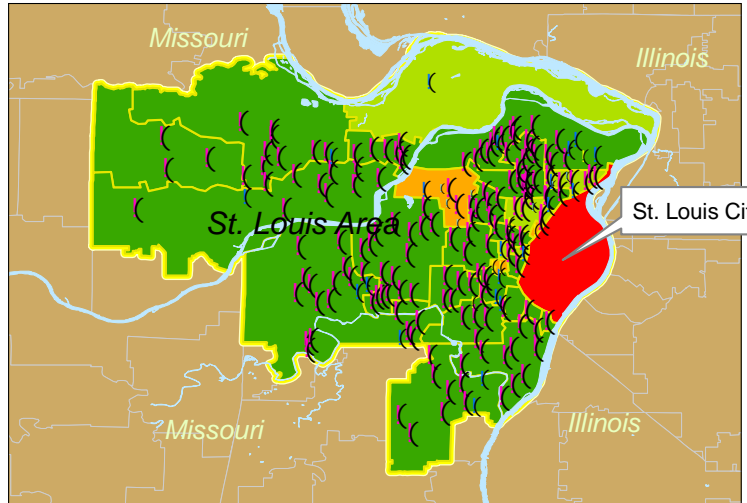
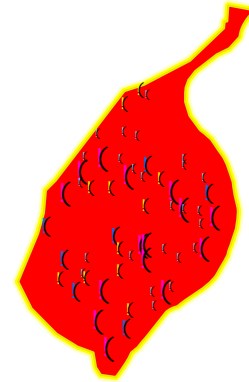


Figure 14

**Percent of Teachers with Regular Certificates**



Elementary School



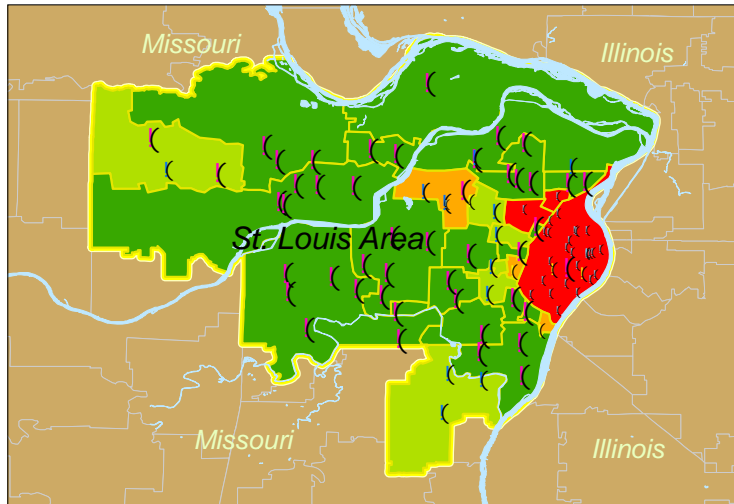
St. Louis City

**Public schools**

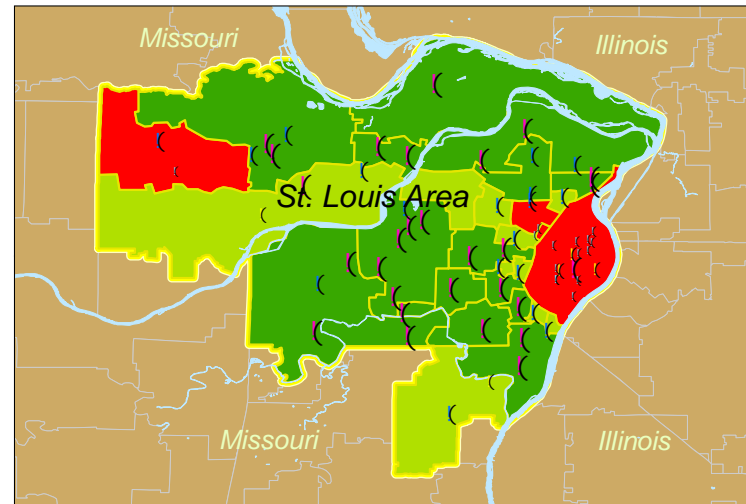
- ( 57.9% - 94%
- ( 94.1% - 96%
- ( 96.1% - 98%
- ( 98.1% - 100%

**School districts**

- 80.0% - 94%
- 94.1% - 96%
- 96.1% - 98%
- 98.1% - 100%

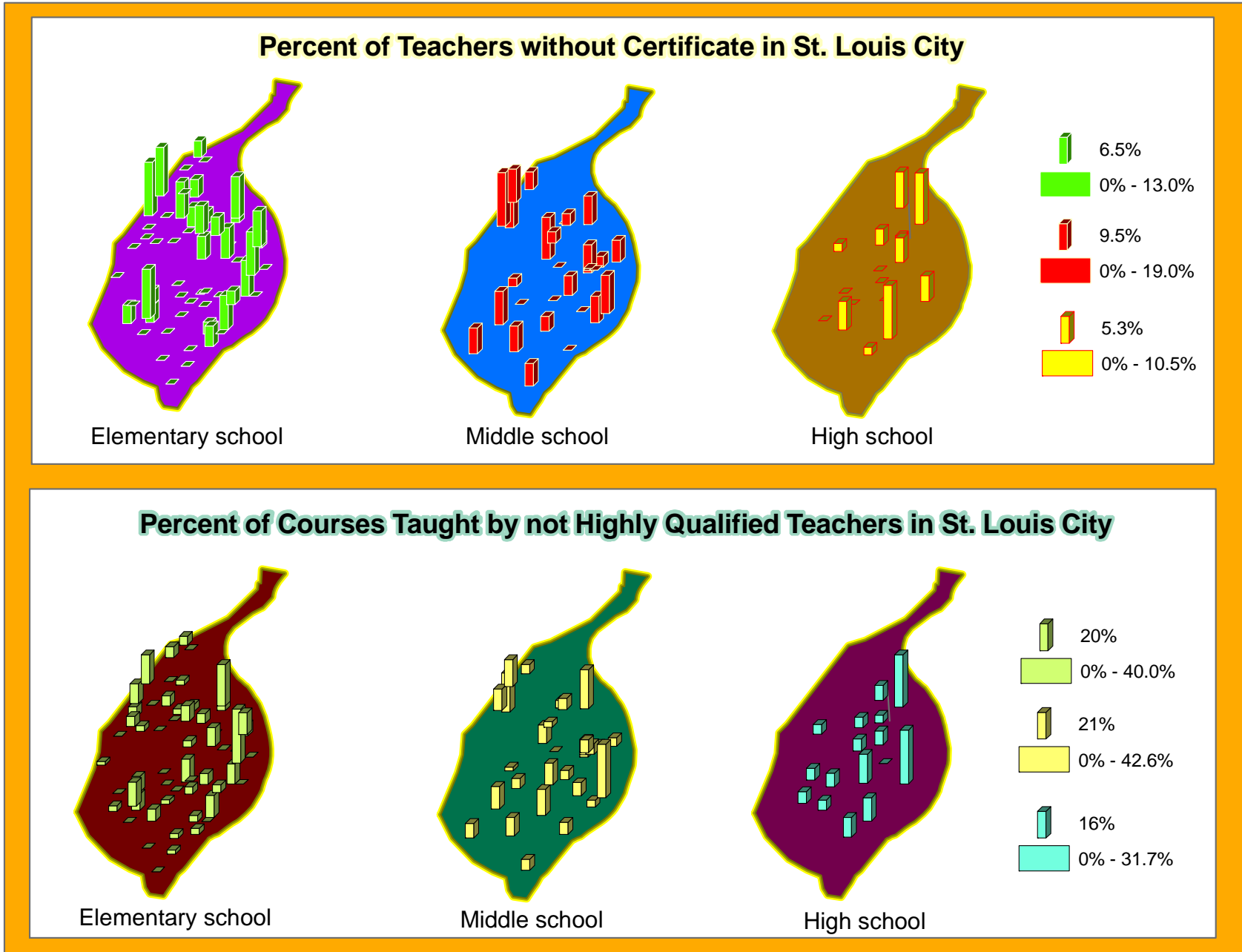


Middle School



High School

Figure 15



**Figure 16**  
**Average Percentages of Proficient/Advanced Students in**  
**Communication Arts, Science, and Mathematics**  
 St. Louis City Schools Vs. Other St. Louis Area Schools

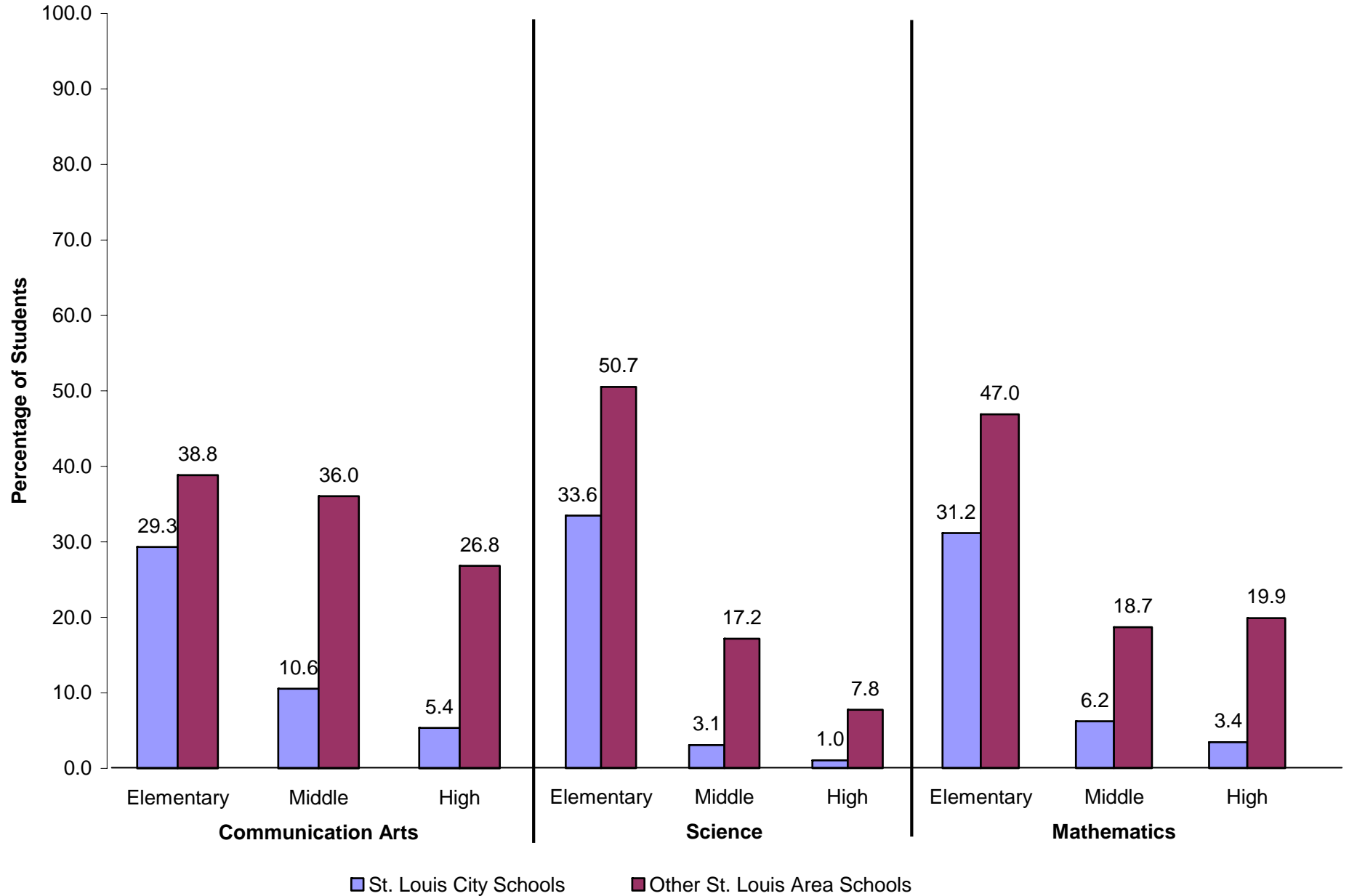


Figure 17

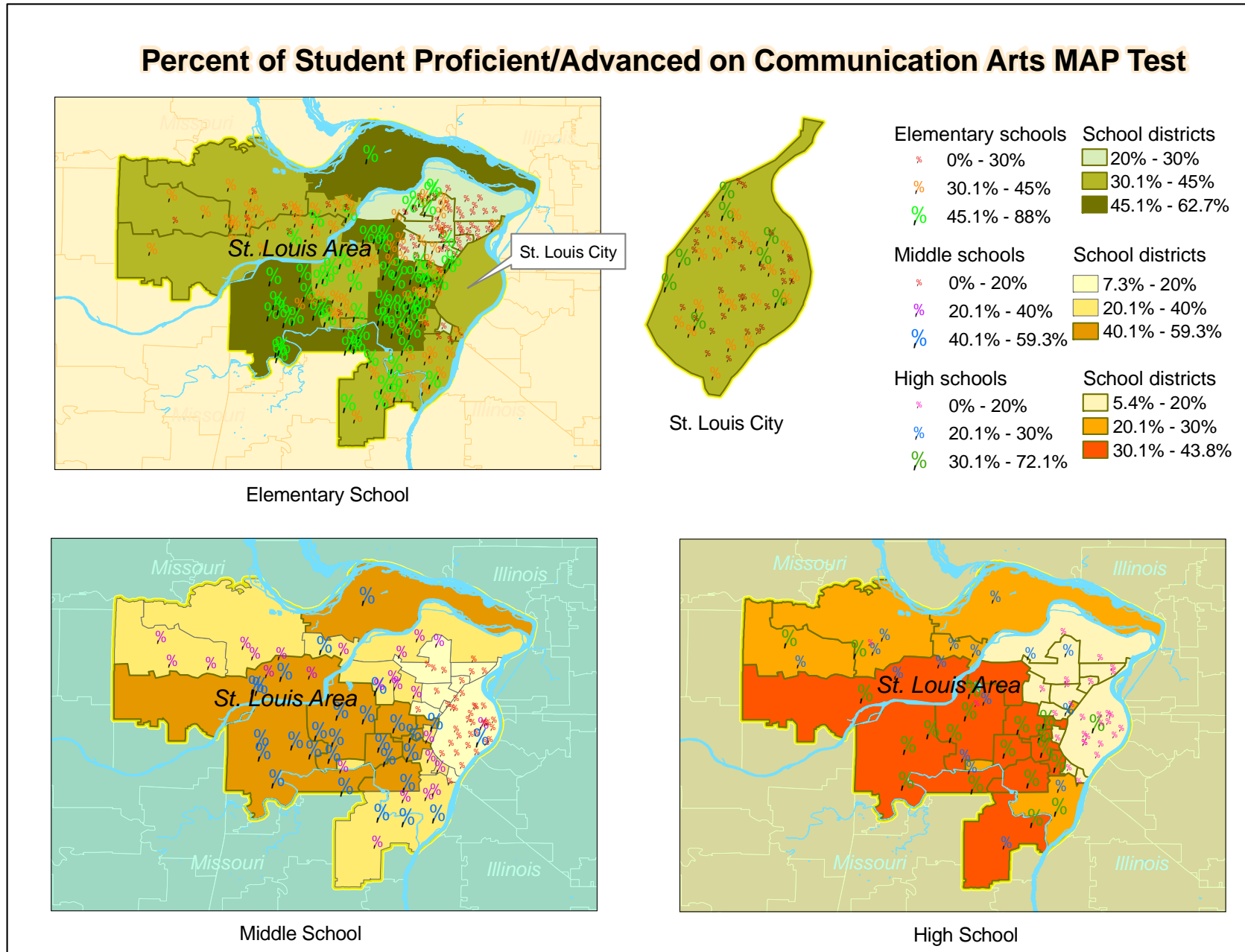
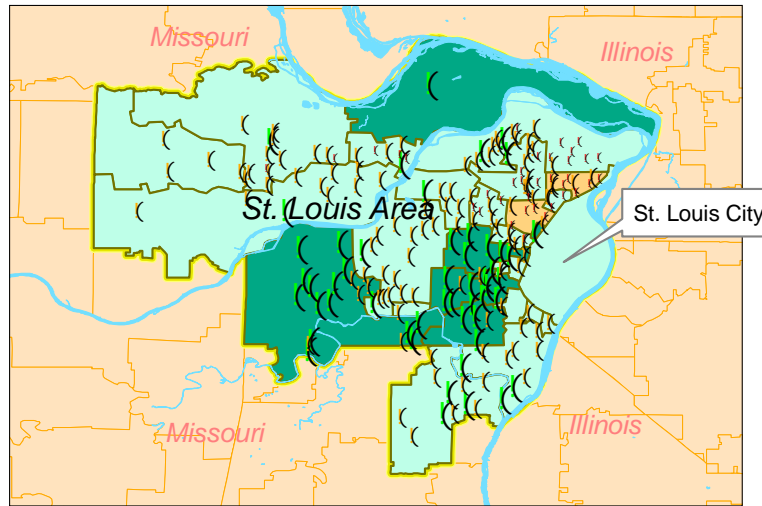


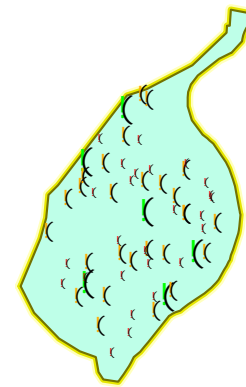


Figure 18

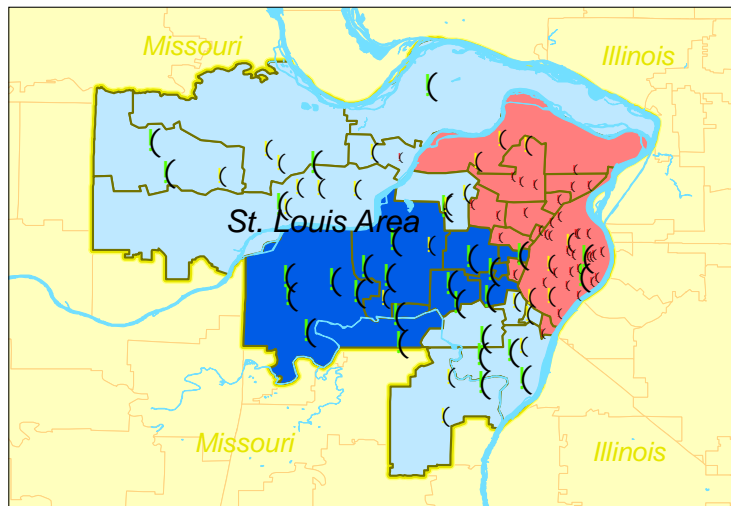
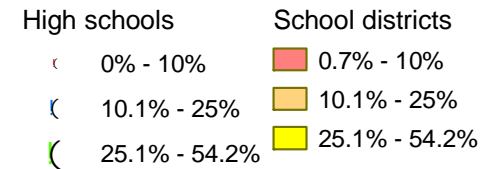
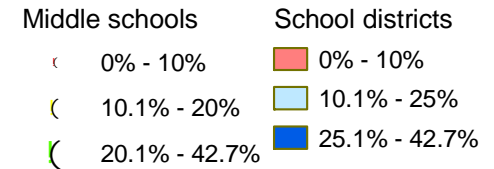
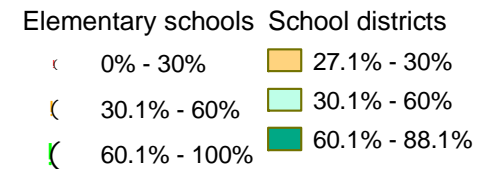
**Percent of Student Proficient/Advanced on Math MAP Test**



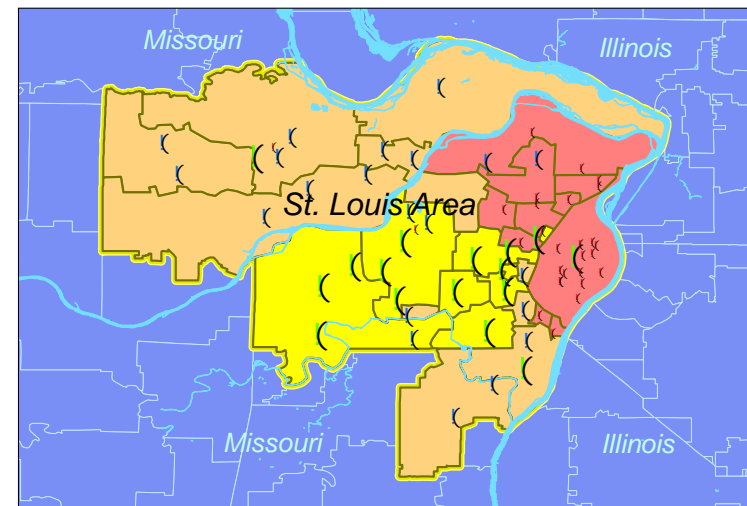
Elementary School



St. Louis City



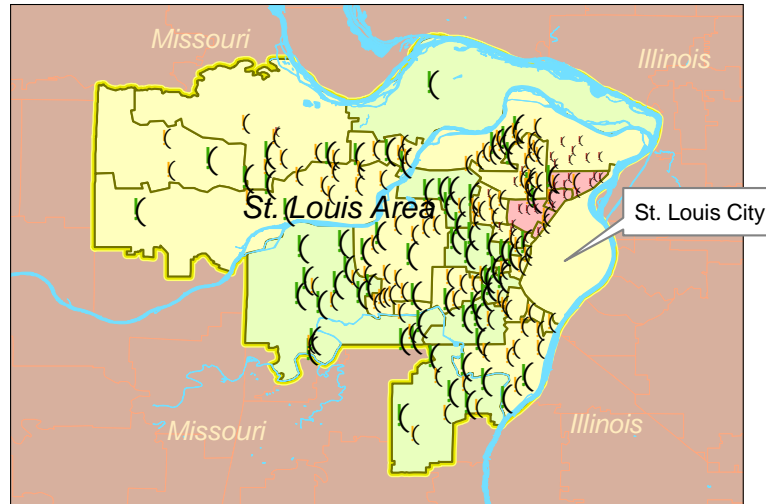
Middle School



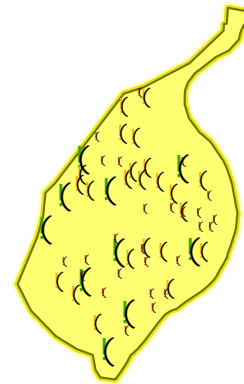
High School

Figure 19

**Percent of Student Proficient/Advanced on Science MAP Test**



Elementary School

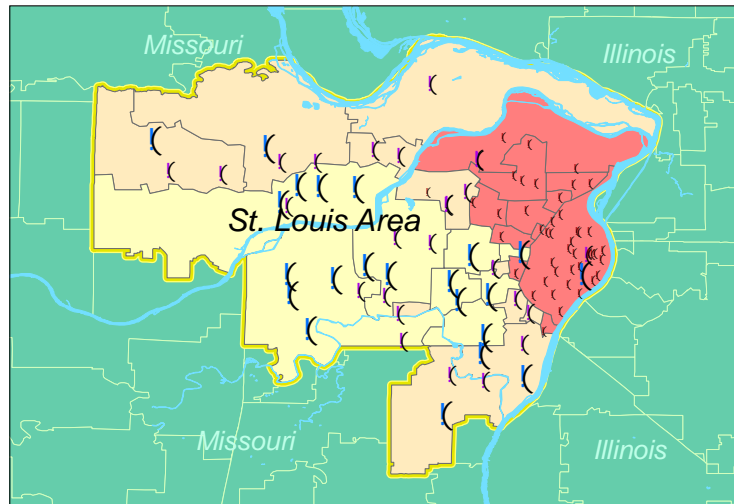


St. Louis City

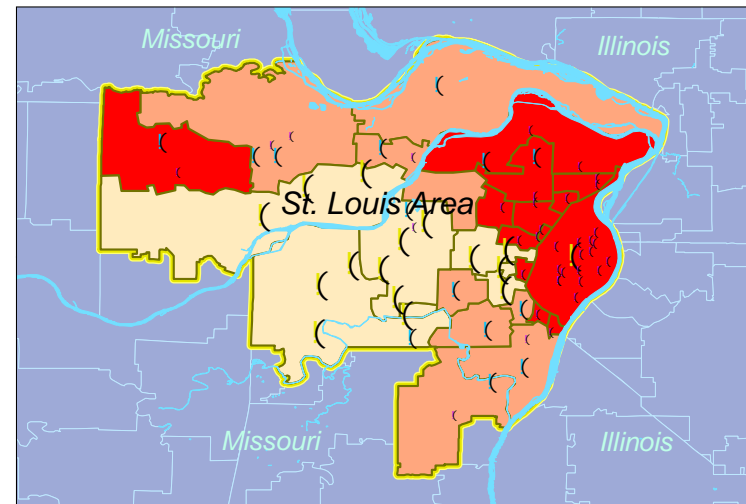
<b>Elementary schools</b>	<b>School districts</b>
( 0% - 30%	( 7.4% - 30%
( 30.1% - 60%	( 30.1% - 60%
( 60.1% - 87.9%	( 60.1% - 82.4%

<b>Middle schools</b>	<b>School districts</b>
( 0% - 10%	( 0% - 10%
( 10.1% - 20%	( 10.1% - 20%
( 20.1% - 35.6%	( 20.1% - 30.2%

<b>High schools</b>	<b>School districts</b>
( 0% - 5%	( 0.3% - 5%
( 5.1% - 10%	( 5.1% - 10%
( 10.1% - 26%	( 10.1% - 16.2%



Middle School



High School

**Figure 20**  
**Dropout and Graduation Rates**  
St. Louis City Schools Vs. Other St. Louis Area Schools

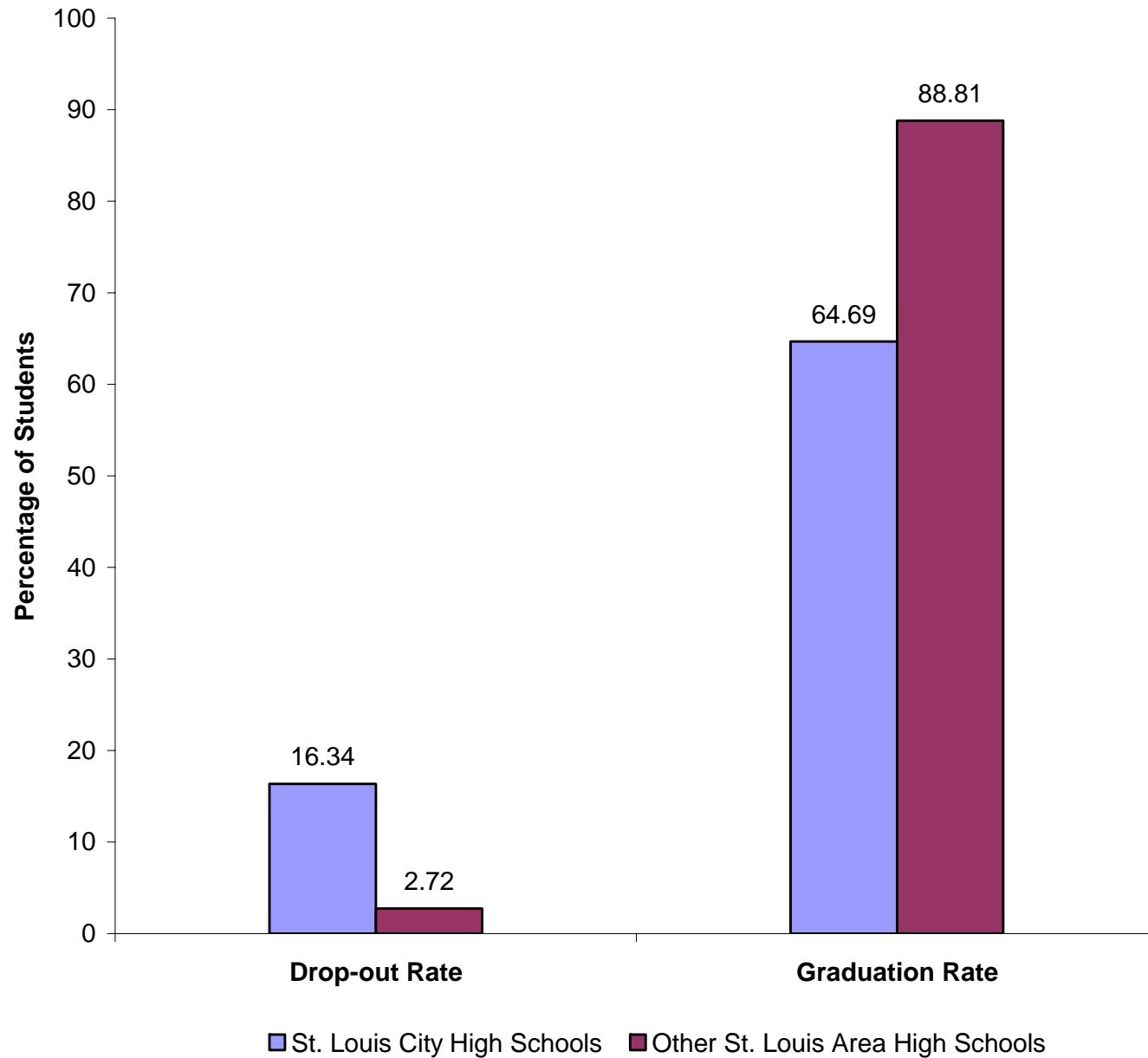


Figure 21

