Student Mobility and the Impact on Student Assessment Scores

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STUDENT MOBILITY AND THE IMPACT ON STUDENT ASSESSMENT SCORES IN HOLYOKE

The Holyoke Public School District completed a study on student mobility as it relates to performance on MCAS. This study focused on students who achieved a passing MCAS score who have been in the Holyoke district for at least five years (Stable cohort) versus students who have been in the district for less than five years (Mobile cohort). It was completed to ascertain the degree of negative impact on academic achievement and performance on MCAS. The summary of findings and the entire study supports our claim.

- Student mobility averaged approximately 40% in grades 4, 5, 6, 7, 8 and 10.
- The Stable cohort of students out performed the Mobile cohort of students in all grades, especially in grades 7, 8 and 10.
- Results on MCAS in English Language Arts were higher than math for Stable students.
- The Limited English Proficient (LEP) subgroup for the Stable cohort outperformed the LEP Mobile cohort and the non-LEP subgroup for the Stable cohort was at or near the State Composite Performance Index (CPI) levels.
- The Stable SPED cohort scores also outperformed the Mobile SPED cohort with a significant difference in ELA scores over math scores.
- The Hispanic Stable cohort scored better than the Hispanic Mobile cohort and in grades 8 and 10 were at or near the CPI in ELA.
- The Stable and Mobile cohort scores, aggregated for grades 4 through 8, for individual schools showed similar patterns to the district. However, some schools had a significantly higher mobility rate than others and showed significantly lower passing rates for the Stable cohort, but still better than the Mobile cohort.
- This analysis provides evidence that student mobility negatively impacts student performance in Holyoke on State-wide MCAS assessments.

The investigators completed a study of the Holyoke School Department on 2008 MCAS scores and student mobility. The focus question for this analysis was: Does student mobility affect performance on MCAS? Specifically, do Holyoke students who have been in the Holyoke school district for at least five years score better on the state-wide MCAS assessment than students who have been in our district for less than five years? Aggregate test scores for grades 4, 6, 7, 8, and 10 were compared for the two cohort groups. The analysis focused on scores of Needs Improvement, Proficient, and Advanced Proficient as an indicator of success on the MCAS.

The 2007 October Census was used as a basis to determine a student's mobility status. This was done by comparing student SASID numbers from the October 2007 Census with October Census data in each of the previous four years, 2003, 2004, 2005, and 2006 in Holyoke. These students were grouped together in the Stable cohort. All other students were put in the Mobile cohort. Table 1 is a breakdown of student counts by grade for total students, Stable students, and Mobile students. The students who were identified as Stable (at least five years in the Holyoke Public Schools) averaged just over 60 percent in each grade. The only exception was in Grade 10.

HOLYOKE 2008
NUMBER AND PERCENT OF STUDENTS
BY STABILITY COHORT

TABLE 1

GRADE	TOTAL STUDENTS	STABLE COUNT	PERCENT	MOBILE COUNT	PERCENT
4	426	257	60%	169	40%
5	418	268	64%	150	36%
6	480	305	64%	175	36%
7	433	278	64%	155	36%
8	491	305	62%	186	38%
10	487	258	53%	229	47%

Five years provided a durable longevity period for this analysis. We began our analysis of MCAS scores with students in Grade 4 because this starting point would allow us to keep the same length of time (5 years) for all grade levels in this study. The two mobility groups created by comparing SASID numbers in Access were then used to create a Special Code in TestWiz. TestWiz staff created a code with three values: a "No" meant a student was a part of the Stable cohort, a "Yes" meant a student was in the Mobile cohort, and a blank meant a student was Unspecified. Unspecified students are students who came in after the 2007 October Census. These students were included with the Mobile cohort for this analysis.

The analysis was done at the district level to ensure that the results were statistically significant. Breaking the analysis down by school and by grade may have resulted in student groups that were too small to analyze with any statistical significance. Therefore, the results are presented at the district level by grade. Two additional mobility measures were not used in this analysis. First, the mobility of students within a school year was not taken into consideration. If the results of this analysis were inconclusive, then we could have further identified Stable students with the March and/or June census SASID figures for each of the five years. Student mobility between schools in Holyoke was also not considered in this analysis. The district has made significant enrollment policy changes in the last five years (school zones, for example) and Holyoke had elementary and middle schools which would have resulted in a false mobility rate.

Chart 1 and Chart 2 show ELA and math MCAS scores for 2008 by grade for the two cohort groups. In both cases, the percentage of students that met or exceeded the passing proficiency was higher for the Stable cohort; frequently the difference was double digits. By 10th grade, the percent of students in the Stable cohort passing the MCAS was 87% in ELA and 75% in math, 19% and 22% more than the Mobile cohort, respectively. Additionally, the 10th grade stable cohort of students surpassed the State Composite Performance Index (CPI) of 85.4% in ELA and fell just below the State CPI of 76.5% in math.

CHART 1

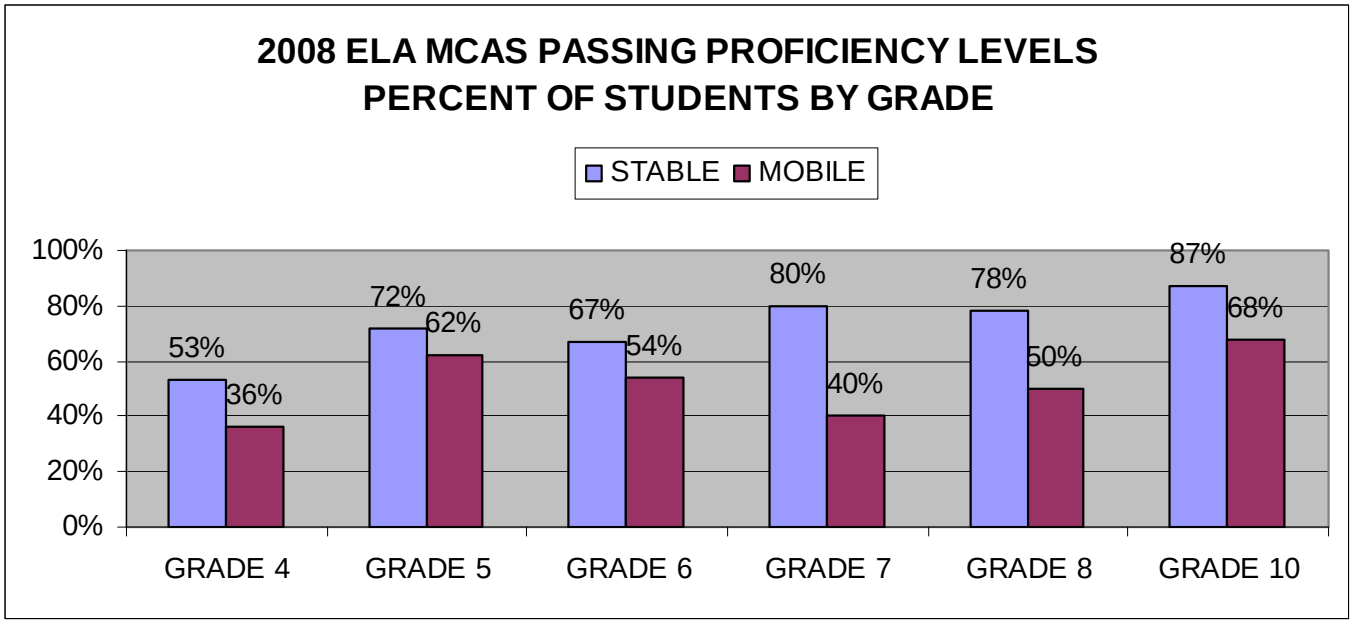
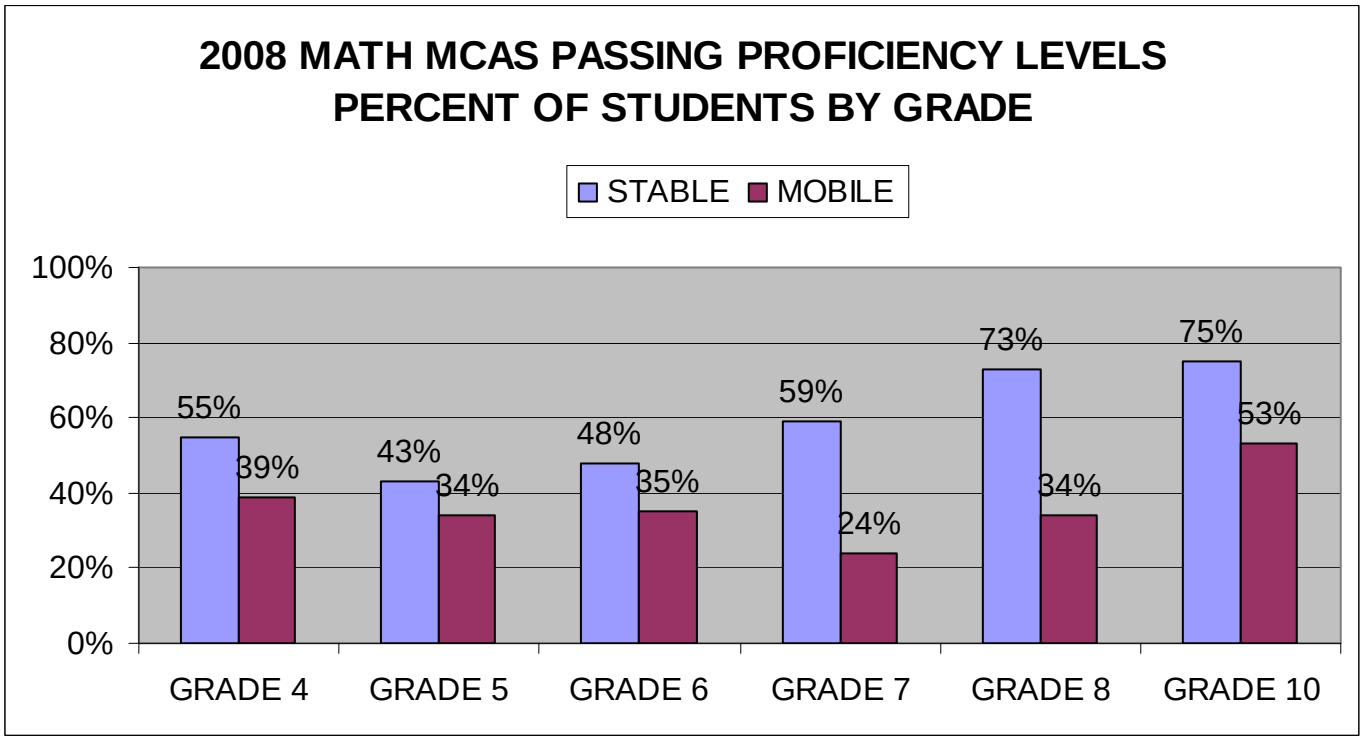


CHART 2



Over the last several years, numerous studies and articles including The Penn Graduate School of Education article (Rhodes, 2006) and the Educational Leadership article (Hartman, 2006), have shown that levels of higher student mobility affect both the Stable student cohorts and classroom teaching practices. Additionally, mobility also impacts student behavior, home life and the community at large.

The charts presented in this study lay the foundation for using more accurate and useful measures for districts in large urban areas or any district which has a high student turnover rate. They confirm what many educators have felt: that student mobility is an issue when it comes to measuring student performance. Stability reduces the number of interruptions to the educational process and provides the student with consistent instruction and feedback, among other findings. To further examine our claim that mobility significantly impacts student performance and classroom practices, we will present and discuss additional supporting data from various subgroup populations.

As seen below in Chart 3 and Chart 4, students in the Stable cohort showed consistent gains in their MCAS scores for ELA and math after a slight dip in fifth grade. Additionally, middle school students in grades 7 and 8 significantly outperformed students in grades 4 through 6 for the Stable cohort in ELA. Math scores for this same group of students also followed the same pattern of performance. As compared to the Mobile cohort who demonstrates great variation in scores over grade levels and therefore loses traction in meeting target performance levels, the Stable cohort continues to improve and is performing at or near State levels.

CHART 3

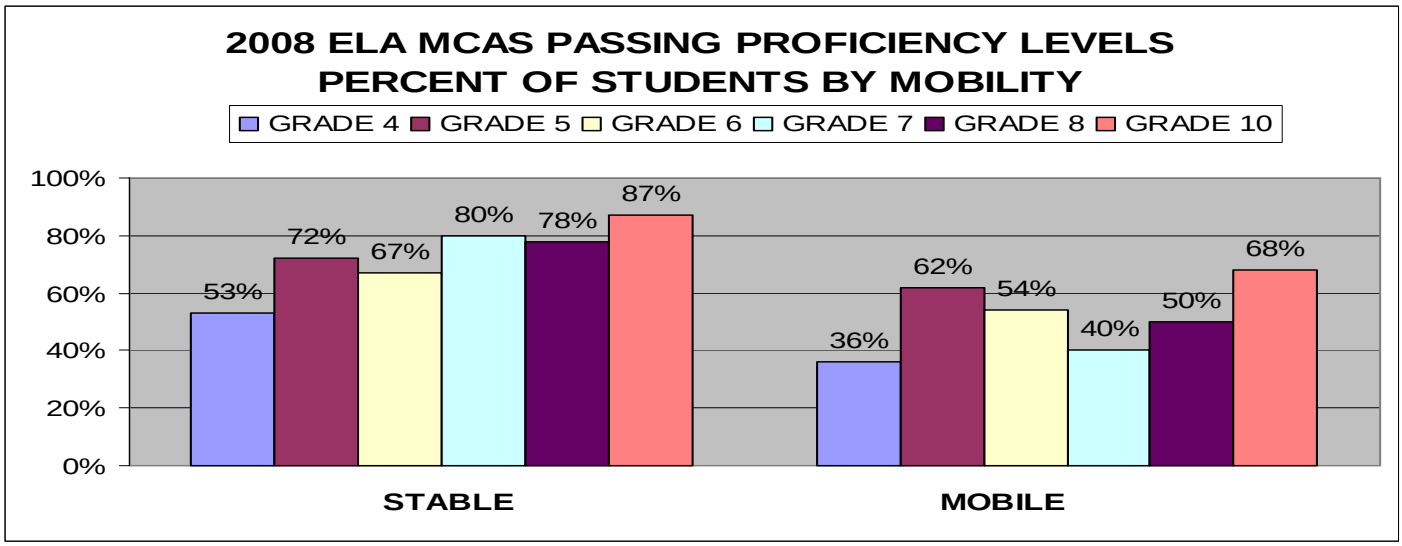
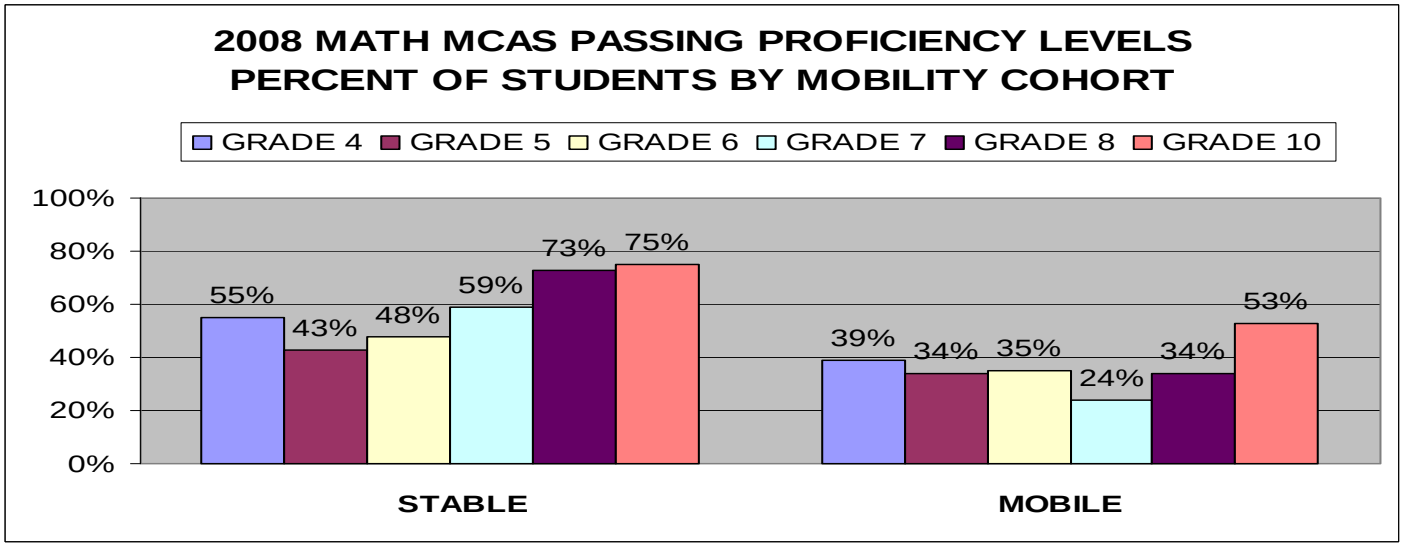


CHART 4



There are a couple of possible explanations as to why the Stable middle school student cohort is faring better than their Stable elementary school counterpart.

First, as a response to the increasing mobility rates in the District, the Holyoke Public Schools moved on implementing two initiatives. The first was to restructure the district to create K-8 schools. This initiative not only provided smaller learning and teaching communities for students and staff, but also helped provide access to educational programs at their attendance zone schools. Prior to reorganizing the grade levels and creating attendance zones, many families had children attending sometimes as many as three different schools. Children were enrolled based on available seats for their grade level across the City. Older middle school children attended school separated from their younger siblings making it difficult for families to get involved and participate in school activities. Under the K-8 arrangement, brothers and sisters attend the same school allowing parents/guardians opportunities to more fully participate in school activities. The second initiative that was implemented and continues to be sustained is a program aimed at stabilizing middle school students, called the Transient Opportunity Program (TOP) program. This program serves to provide meaningful and effective learning experiences for students using a standards-based curriculum while assisting families in their efforts to reduce transiency and create a stable home environment. Through intake assessments (including performance and home assessments), the needs of children and families are identified and appropriate services are put in place with the assistance of HPS staff. These needs include, but are not limited to: intensive small group instruction for students, interventions to support students with gaps in knowledge, and coordinated case services with families and organizations geared at stabilization (mental health services, language acquisition, job training, etc.). While TOP's primary goal is to stabilize students and families with high mobility, it also serves a secondary goal…. providing for a more stable classroom working environment by reducing the frequency of interruptions during the school year.

Second, in addition to restructuring the district to form K-8 schools and creating TOP, the district entered into a partnership with the Department of Elementary and Secondary Education and America's Choice. Through this partnership, a variety of improvement efforts have been implemented including curriculum alignment, creation of curriculum maps, and bringing ELA and math programs into the middle school level called Reader's & Writer's Workshop and Math Workshop. While these programs have since been expanded to include elementary grade levels, it has been the middle school students who have had the maximum benefit of these initiatives.

To this point, our analysis on the impact of mobility has shown that Stable students academically outperform students who have higher degrees of mobility in a significant way. Additionally, this difference in performance has a direct correlation to MCAS results in both ELA and math. "Does this hold true in subgroups as well?" The next several charts will examine this question and will provide evidence of what we believe we will see…. a significant and widening gap in performance between the Stable and Mobile Cohort groups.

Results for Limited English Proficient (LEP) students who took the 2008 MCAS test are presented by mobility cohort in Charts 5 and 6 and Charts 7 and 8. The effects on the LEP student scores with regards to mobility are consistent with the district results, that Stable students outperformed the Mobile students.

CHART 5

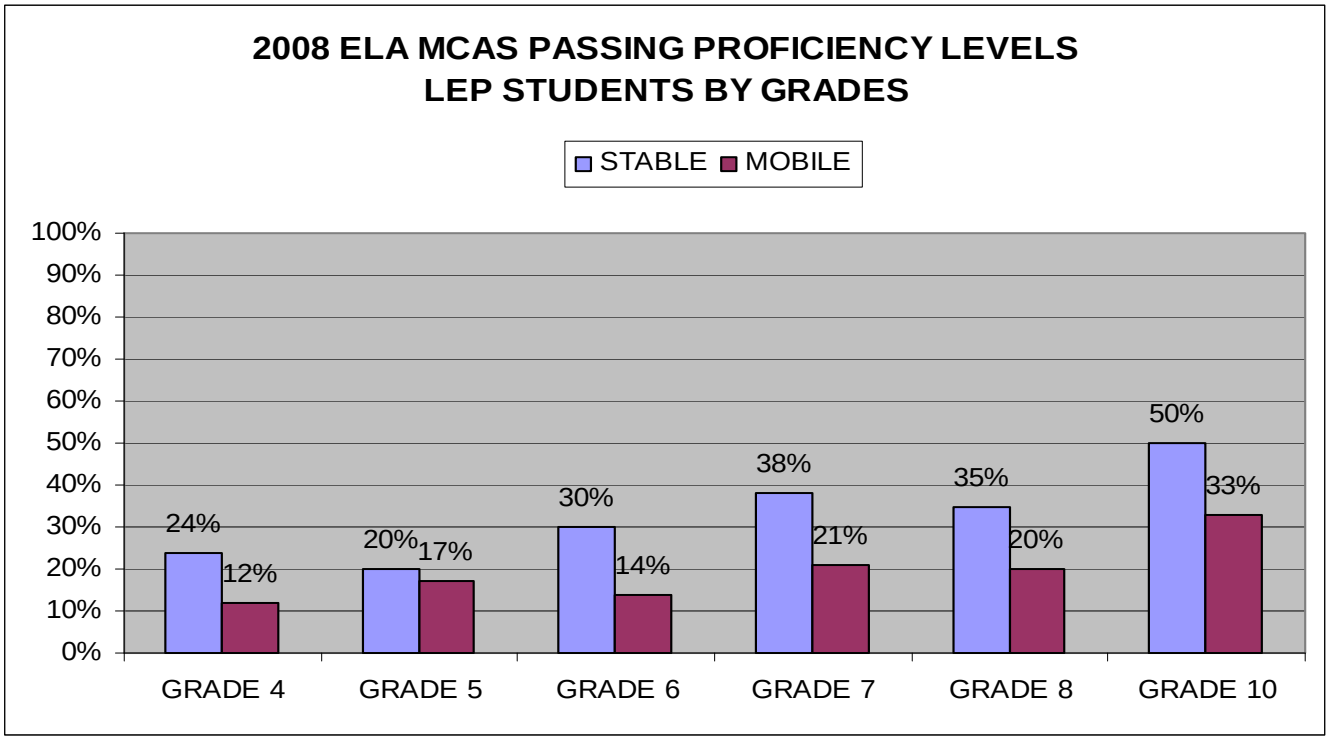


CHART 6

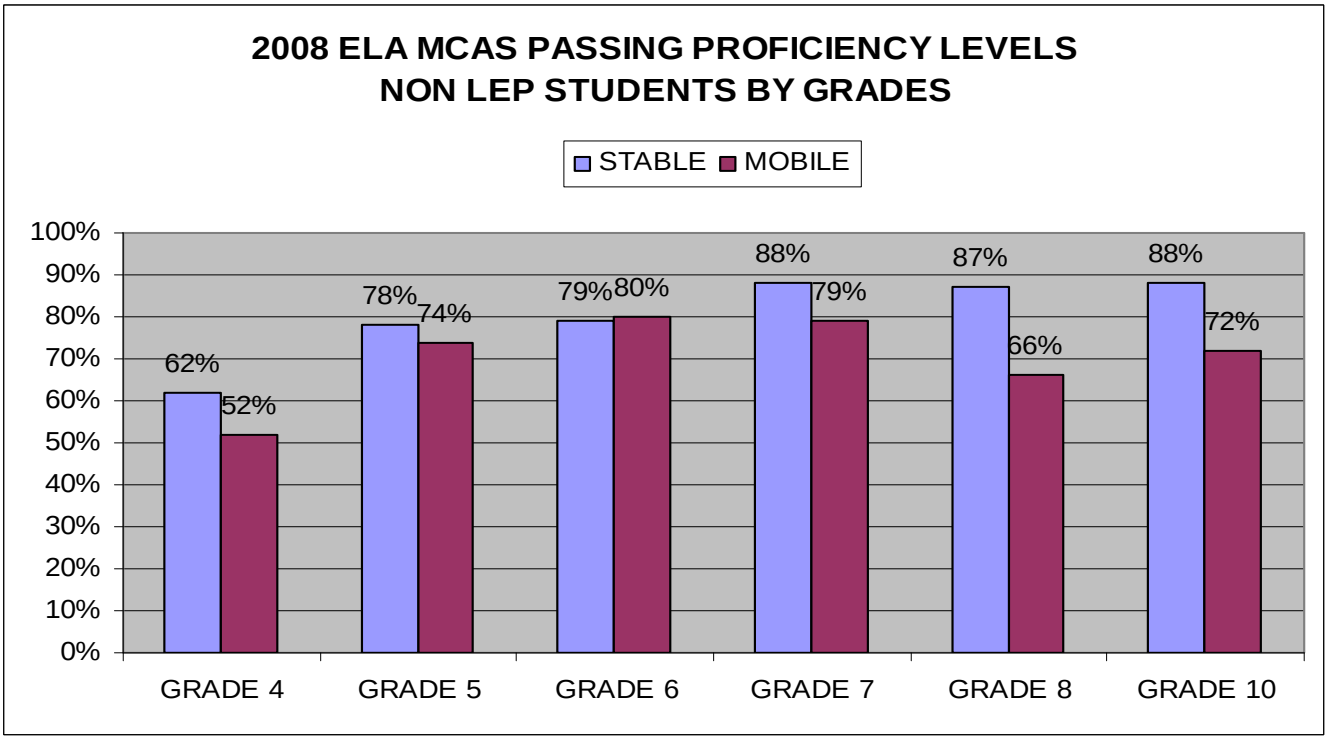


CHART 7

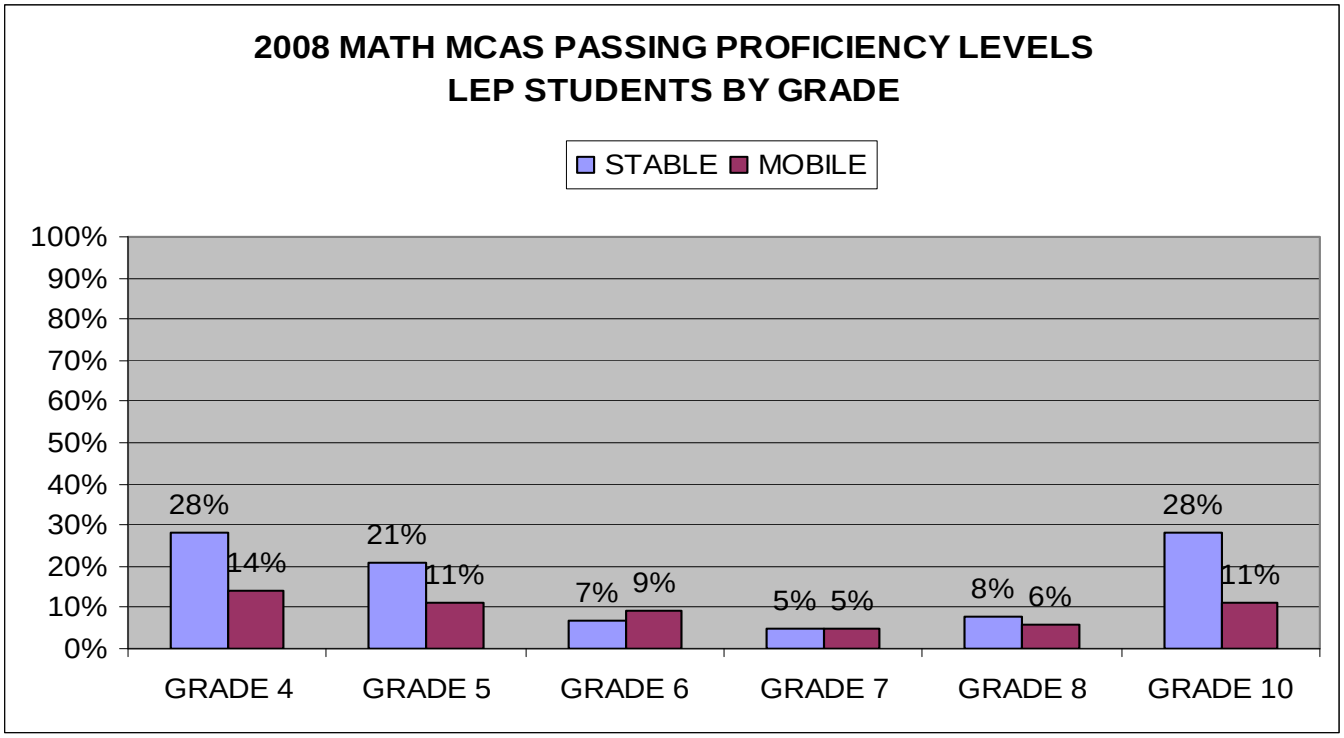
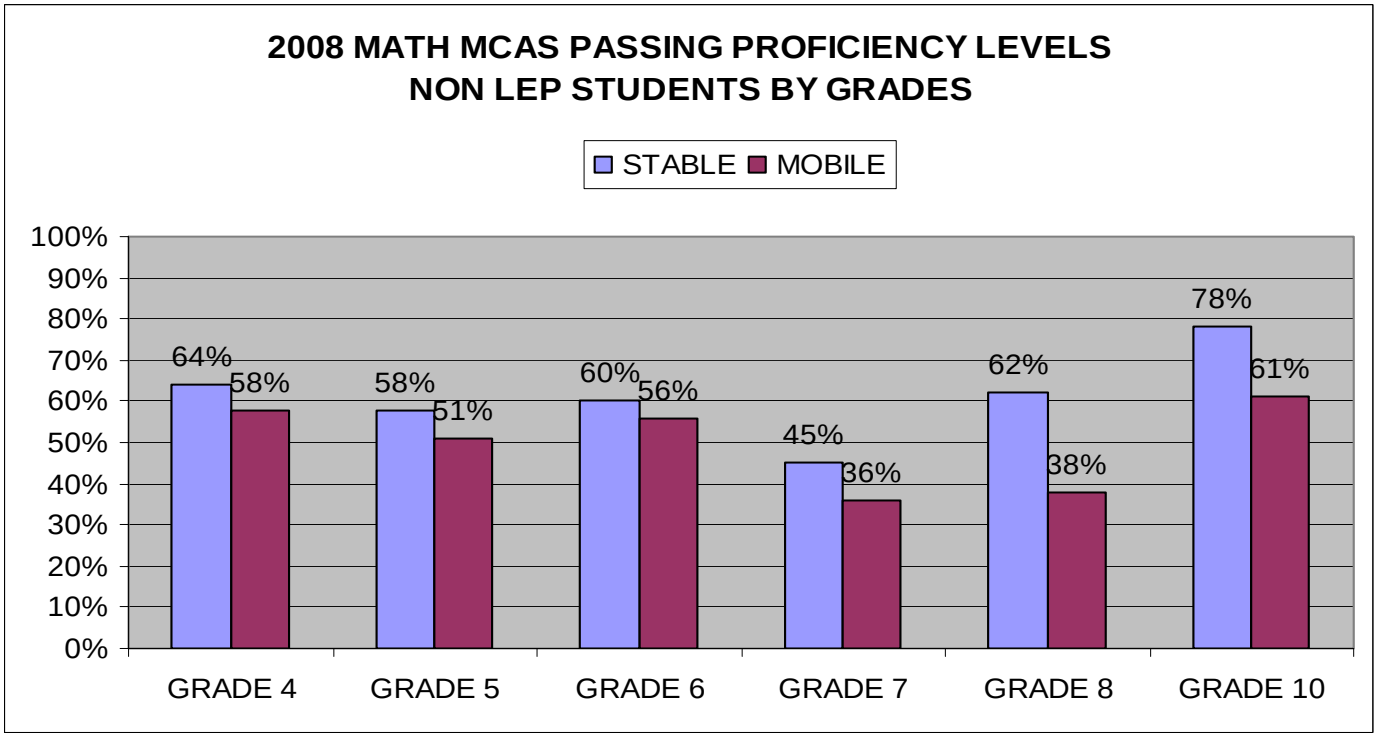


CHART 8



It is important to note that while the LEP Stable cohort performed better than the Mobile cohort, these students are clearly still not achieving at the performance levels required by the State and NCLB act even after five years. This is due to the nature of the assessment system. The MCAS test is an assessment used to judge the performance of native speakers and writers of English. Much research exists to support the fact that LEP students usually require five to seven years to become proficient in the English language. Since the MCAS requires LEP students to take the English MCAS after just one year of being in the country, and immediately for math without sufficient language acquisition, it is no wonder the performance gaps are as large between LEP and non-LEP students. Therefore, the State and the Nation must re-examine the assessment system and develop measures to appropriately assess the growth of LEP students. A "one size fits all" assessment system must never be the tool by which children who are learning English fail and districts, teachers and students are held accountable.

Chart 9 and Chart 10 show Special Education students also performed better on their MCAS scores when comparing the Stable cohort to the Mobile cohort.

CHART 9

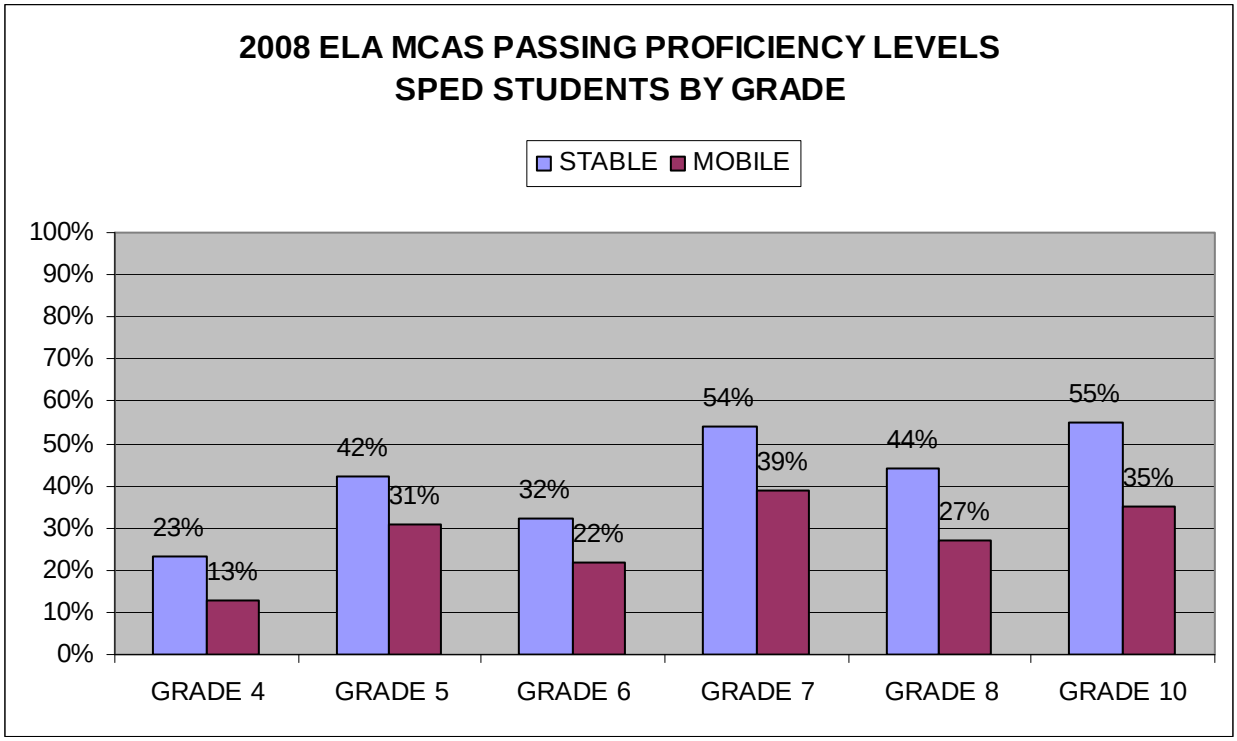
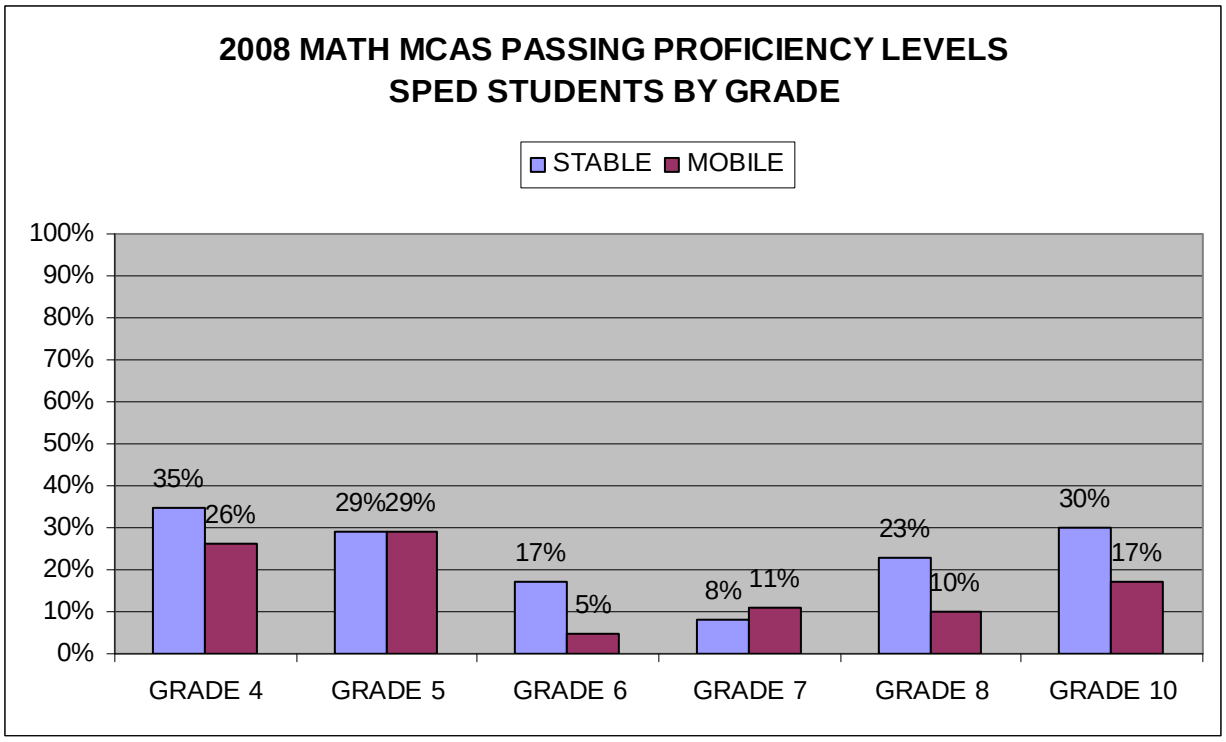


CHART 10



Like the LEP Stable cohort, the Sped Stable cohort performed much better than the Mobile cohort but are still not achieving at the performance levels required by the State even after five years. Again, this is due to the nature of the assessment system. Students with identified disabilities and/or handicapping conditions should be assessed using an instrument that measures growth over time. At present, the MCAS does not have this measure in place.

As seen in Chart 11 and Chart 12, the passing percentage for Hispanic students who have been in Holyoke for at least five years was significantly higher than the Mobile Hispanic student cohort; by eighth grade this percentage was over 70%.

CHART 11

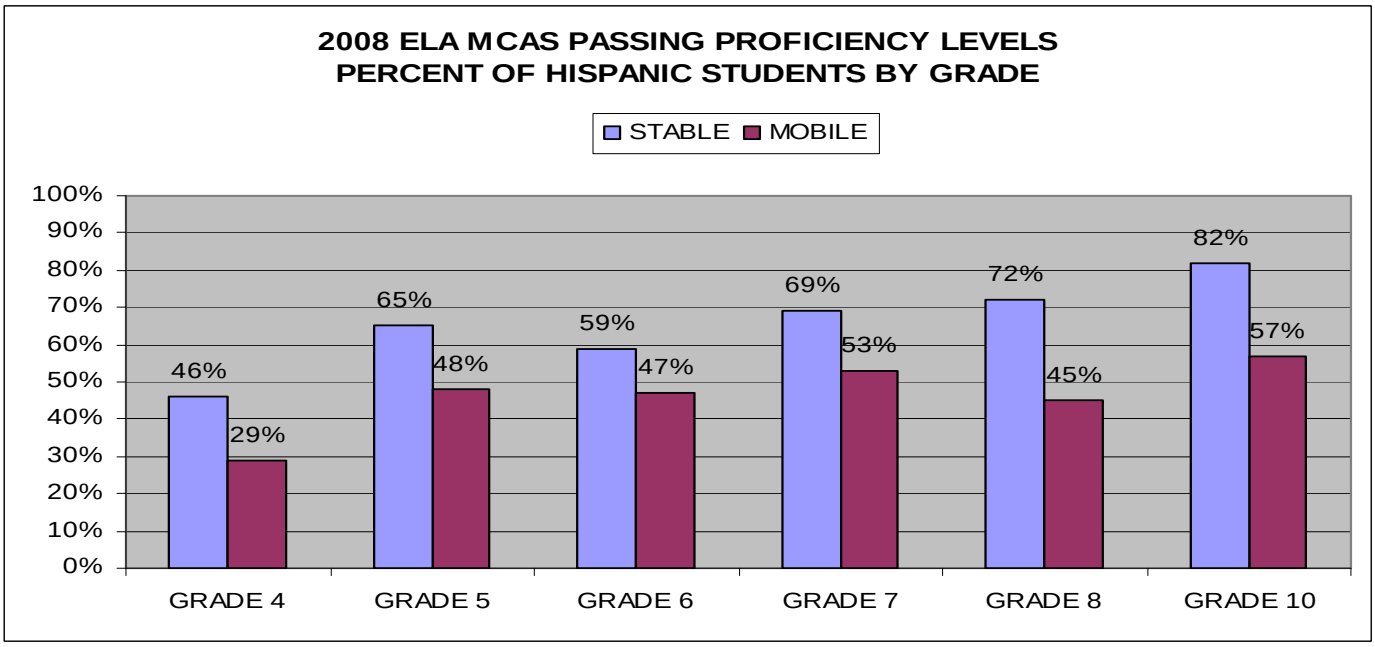
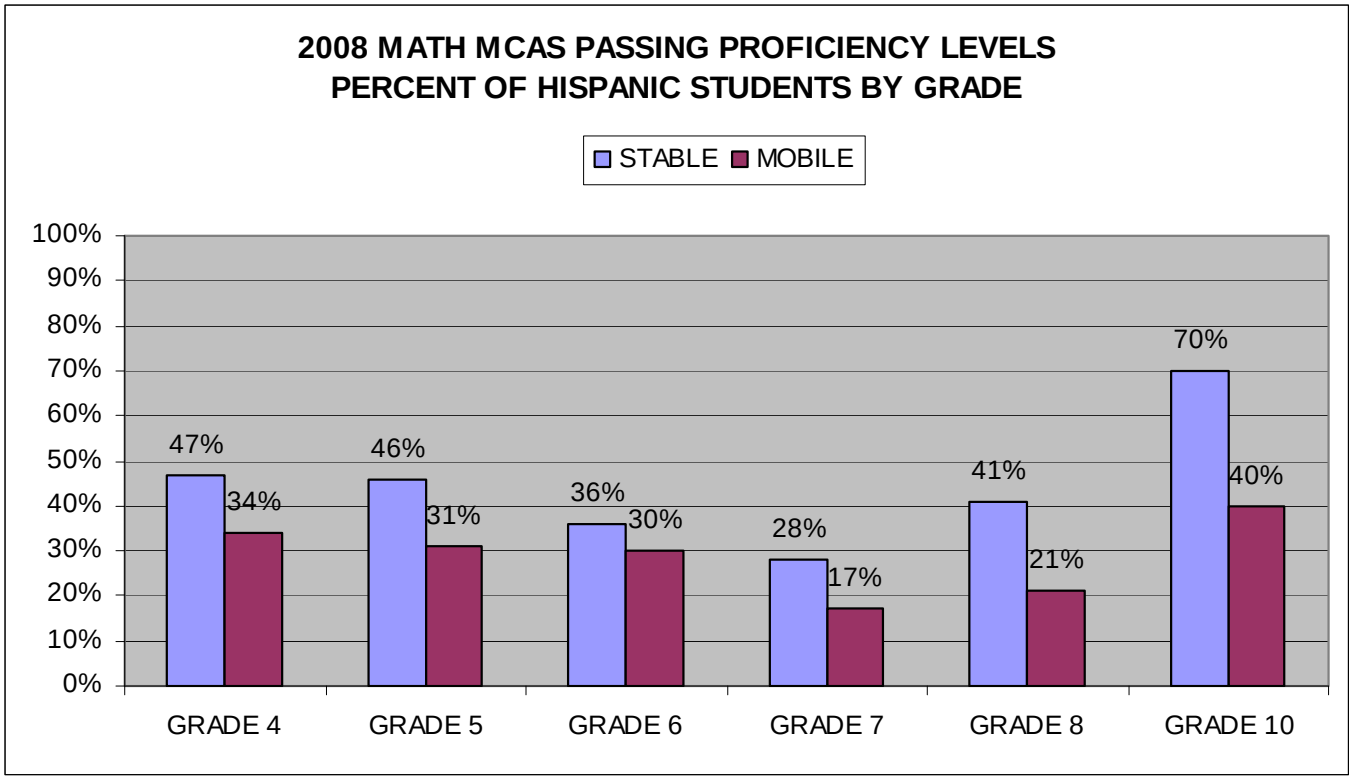


CHART 12



Of interest with the two charts above is the fact that while National statistics show that Hispanic student performance is often between two and three years below their non-Hispanic counterparts grade levels, our Stable cohort of Hispanic students are performing at or near Sate performance levels by tenth grade.

After studying mobility at the district level, we were interested to see if different schools showed similar patterns between stable and mobile students as did the district. We were interested to see if different schools showed similar patterns between the Stable and Mobile Cohorts of students. Therefore, we compared schools by combining proficiency levels for a range of grades (grades 4 through 8 specifically). The number of students in each grade by each proficiency level was added together and a percent was computed for each cohort. The following question was then examined… "Does student performance by school follow the same pattern on MCAS test scores with regards to mobility in the district?"

Table 2 and Table 3 show student counts and percentages of students passing the MCAS based on proficiency levels in grades 4, 5, 6, 7, and 8 combined. Most schools did show a similar pattern between stable and mobile students, although Donahue and McMahon remained relatively flat in ELA between the two cohorts. These tables also show the variation in mobility for different schools with Sullivan showing the lowest mobility rate.

2008 MCAS ELA AND PASSING PROFICIENCY LEVEL BY SCHOOL AND MOBILITY COHORT

TABLE 2

GRADES 4 - 8			COUNT		PERCENT PASSING MCAS		
ELA	PERCENT LOW INC.	PERCENT MOBILE	STABLE	MOBILE	STABLE	MOBILE	DIFF-ERENCE
DONAHUE	91%	31%	211	96	74%	75%	-1%
KELLY	98%	37%	160	95	58%	45%	13%
LYN/LAW	93%	46%	206	175	68%	48%	20%
MCMAHON	52%	36%	113	64	79%	75%	4%
PECK/MOR	92%	41%	239	168	57%	32%	25%
SULLIVAN	55%	24%	264	82	85%	68%	17%
WHITE	80%	35%	182	100	75%	68%	7%
TOTAL	81%	36%	1375	780			

2008 MCAS MATH AND PASSING PROFICIENCY LEVEL BY SCHOOL AND MOBILITY COHORT

TABLE 3

GRADES 4 - 8			COUNT		PERCENT PASSING MCAS		
MATH	PERCENT LOW INC.	STABLE	NON-MOBILE	MOBILE	STABLE	MOBILE	DIFF-ERENCE
DONAHUE	91%	31%	211	95	53%	40%	13%
KELLY	98%	38%	157	95	38%	24%	14%
LYN/LAW	93%	47%	203	179	40%	28%	12%
MCMAHON	52%	37%	113	65	68%	54%	14%
PECK/MOR	92%	42%	239	174	29%	23%	6%
SULLIVAN	55%	24%	263	83	74%	55%	19%
WHITE	80%	37%	179	103	56%	40%	16%
TOTAL	81%	37%	1365	794			

Chart 13 and Chart 14 represent the percentage of passing students for both the Stable and Mobile cohorts for each school as identified in the tables above.

CHART 13

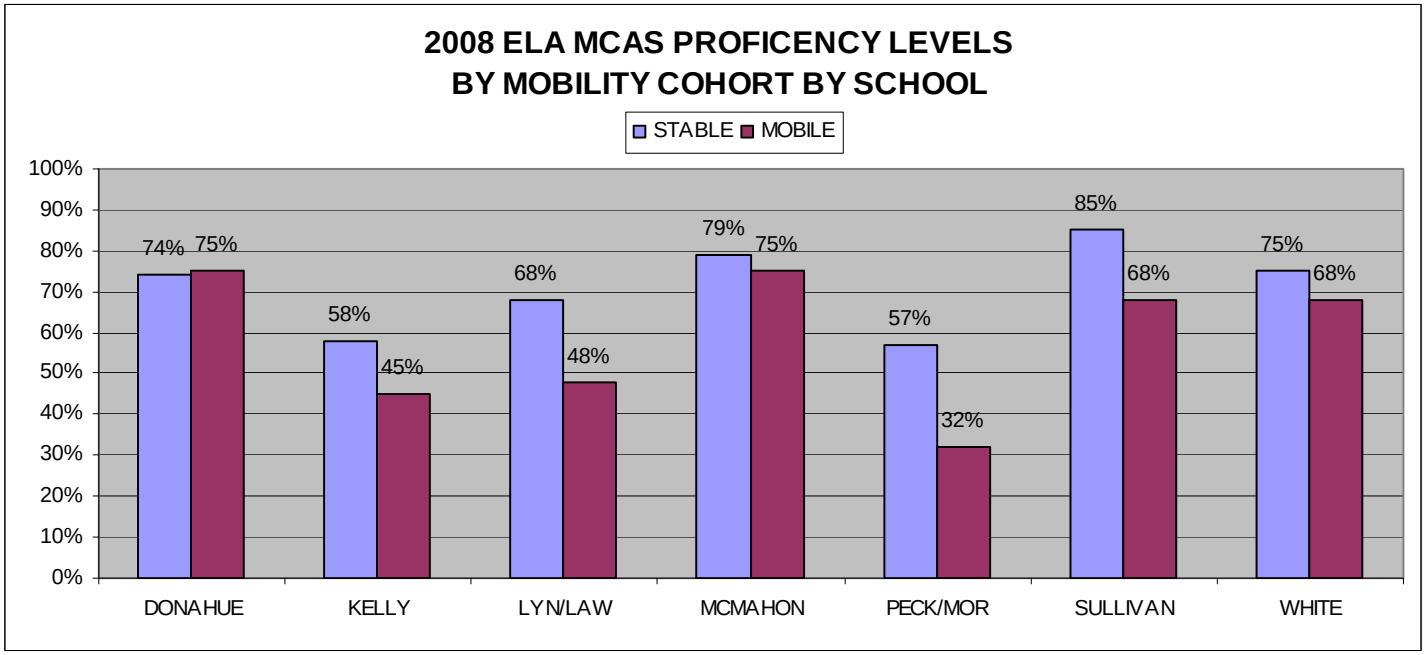
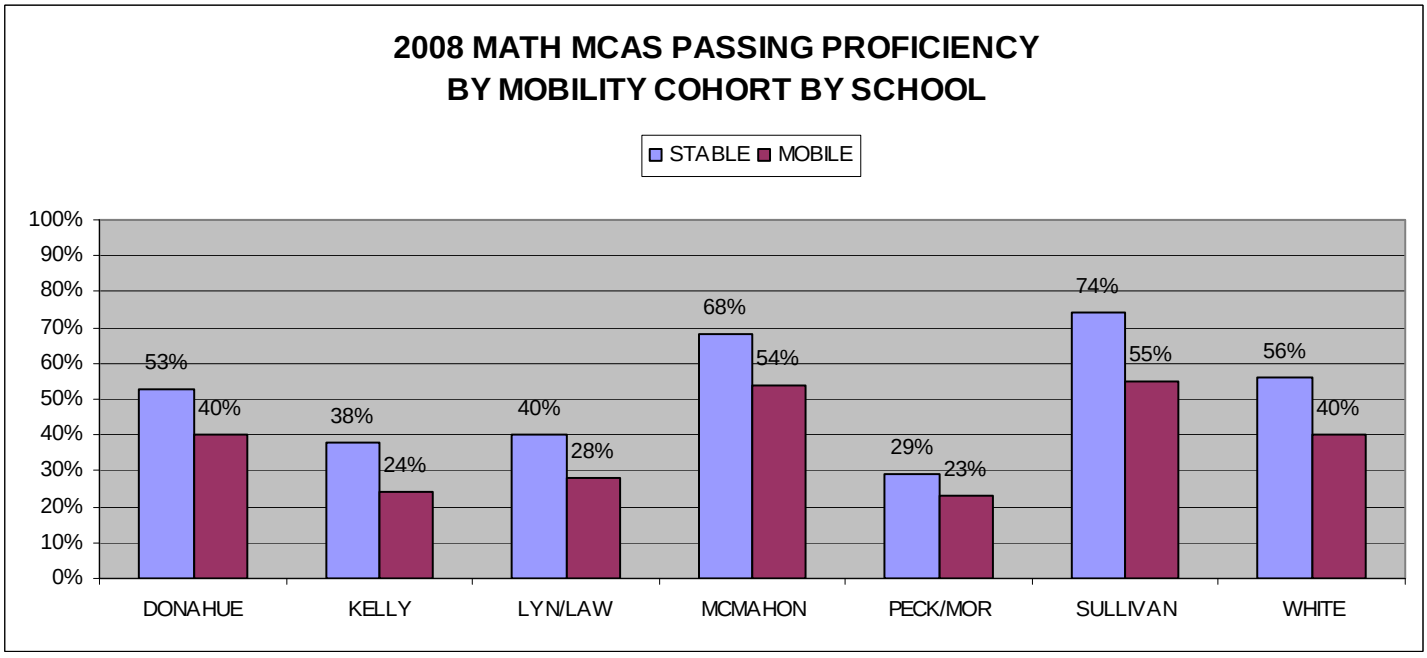


CHART 14



While the analysis shows similar patterns between schools and the district, we see greater distinctions for those schools that are dealing with both the highest percentage of mobility and with severe socio-economic conditions.

After analyzing data at both the district and school levels, we can say with certainty that mobility impacts student performance on MCAS assessment in a significant way. Additionally, it significantly impacts student subgroup populations for whom academic challenges (language acquisition, learning disabilities, socio-economic status, etc.) often exist.

Recommendations

The findings of this study reveal that there is a significant discrepancy in performance when you compare students who are stable with those who are transient. The discrepancy transcends already established subgroup performances that have been historically lower than the norm. When you disaggregate the mobility data and the stable data is left to stand alone, we found that by tenth grade most students performed at or above the State Composite Performance Index (CPI) in both ELA and math. Is it truly equitable and fair to label a school district underperforming whose stable population is performing on par with the state? If one can argue that isn't then we need to find better ways to hold communities accountable when they are challenged with significant mobility issues.

1. Create a "virtual school" test data bank at the State level where mobile students from across the Commonwealth can be tracked separately from non-mobile students. Within this "school" mobile students throughout the Commonwealth will be grouped and evaluated according to assessment measures with performance being charged to the "virtual school" rather than the home districts facing this major issue. Transiency/Mobility should not be the responsibility of a single school district!

2. The State's accountability system alone will not help school districts like Holyoke recruit and retain highly qualified, special subject teachers. A better plan, one that includes investments and incentives, must be developed at the State level to prepare, help attract, and retain teachers for districts like Holyoke. If such a plan is not developed, districts like ours will continue to lack quality teaching and have gaps in academic achievement and student performance as compared to the rest of the State.

- Over the last five years, approximately 35% of the math teachers (K-8) are both highly qualified and still employed by the district. Conversely, approximately 65% of the math teachers (K-8) are either not highly qualified, have resigned, or have been terminated from the district.
- Approximately 38% of the Special Education teachers (K-8) are both highly qualified and still employed by the district. Conversely, approximately 62% of the Special Education teachers (K-8) are either not highly qualified, have resigned, or have been terminated from the district.
- Additionally, 30% of the ELL teachers (K-8) are both highly qualified and still employed by the district, while approximately 70% are either not highly qualified, have resigned, or have been terminated from the district.

3. Allow MEPA to be the accountability measure of language acquisition in the State because it is an assessment designed for ELL students rather than MCAS which is an assessment designed for native speakers of English.

4. Redesign the accountability system to allow for disaggregation of student performance by subgroup with different weight given to ELL and Sped students due to both the amount of time it takes ELL students to acquire language and the degree to which instruction must be adjusted for students with disabilities.

5. Create a better assessment system that measures growth of student sub-groups over time.

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