



Important Statistical Trends in Charlotte Mecklenburg Schools

A Comparison of Schools by Percent SES Composition



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Summary

In 2016, Charlotte Mecklenburg Schools (CMS) used a set of parameters including income, parent education levels, home ownership, English fluency, and number of parents in the home to group its students and families into low, medium and high socioeconomic status (SES) categories. Students in the low SES category typically have fewer educational advantages, while students in the high SES category typically are more advantaged.

The League of Women Voters of Charlotte Mecklenburg (LWVCM) used CMS data to evaluate how a school's SES percentages correlated with factors such as principal and staff stability; staff credentials; and state-assigned school grades. The higher the population of students lacking advantage at a given school, the more likely the school (i) had a principal fairly new to the school; (ii) more teachers with only 0-3 years' experience; (iii) fewer nationally board-certified teachers; (iv) low state growth and proficiency scores; and (v) a higher percent teacher turnover. For schools with high numbers of advantaged students, the converse was true. These correlations were statistically significant and, with few exceptions, highly statistically significant.

The results show that in the critical areas of principal and staff stability along with teacher experience and credentialing, our schools are not equitable. Schools with high concentrations of our less educationally advantaged families, are much less likely to have principal and teacher stability and experienced teachers than schools with high percentages of more advantaged families. Educational research is clear that staffing experience and low turnover are important factors for student learning and success, and the inequities found among CMS schools are not consistent with CMS core beliefs and commitments.

The League of Women Voters of Charlotte Mecklenburg asks CMS to acknowledge the issues identified in this report. Further, we ask CMS to commit to annual community reports that document such data; act to implement policies and practices to reverse the disturbing trends identified here; and re-establish an Equity Committee to guide additional study, assessment, and reporting.

Introduction

CMS is unique in having a reliable and up to date analysis of the socioeconomic composition of its student body. In 2016 they undertook an assessment that grouped students by socioeconomic status (SES).

HIGH SES students/families are those who have educational advantages such as higher income and parental educational attainment, greater English fluency at home, fewer single parent households, and higher instances of home ownership. Using these same factors, students were also grouped into MEDIUM and LOW SES categories. Details about the factors and how they were composited are provided by CMS:

<http://www.cms.k12.nc.us/cmsdepartments/StudentPlacement/PlanningServices/20172018StuAsgnReview/Documents/All%20School%20SES%20Level%202016%20Memo%20Included.pdf>.

In March 2016, the LWVCM received a data set it requested from CMS that reflected the socioeconomic status (SES) composition of CMS elementary, middle, and high schools as well as information about school staff credentials.

The specific parameters provided included:

- Percent enrolled students in LOW SES category
- Percent enrolled students in HIGH SES category
- Principal's Years in Current Assignment
- Percent Teachers with 0-3 Years Teaching Experience
- Percent Teachers with 4+ Years Teaching Experience
- Percent Teachers Nationally Board Certified
- Percent Teacher Turnover 2016-March 27, 2017

The League used the data set to perform a correlational analysis. The analysis yields two values:

- A correlation coefficient*, CC, ranging from -1 to +1 that reflects the strength and direction of the relationship between the two variables (strong correlations will have "high" CC values approaching 1, while weak correlations will be closer to 0), and
- A statistical significance level (a probability value that reflects the likelihood that the results are due to chance alone). If the probability is 0.05[†] or smaller than 0.05, research convention would consider the correlation to be "statistically significant" and very unlikely to occur due to chance alone. If the probability is 0.01 or smaller, the correlation is considered "highly significant."
- Data for 165 schools were provided and analyzed.

* Pearson's r

† 0.05 indicates there is a 5% probability that the results are due to chance

Results

Because the new CMS terminology can be confusing, we use the surrogate terms “less advantaged” and “more advantaged” for LOW SES and HIGH SES, respectively. These less precise but more familiar terms are offered to make interpreting the results more readable:

1. Of the six parameters evaluated, five were correlated or highly correlated with the proportion of less advantaged students (% LOW SES) in a school. These correlations were significantly significant, most at the “highly significant” level. Specifically, the higher the percentage of less advantaged students in a school:
 - the more likely the principal had a short tenure at the school. (CC -0.176, sig. level 0.026)
 - the more likely the school had a high percentage of teachers with only 0-3 years of teaching experience. (CC 0.534, sig. level < 0.001)
 - the more likely the school had a low percentage of teachers with 4 or more years of teaching experience (CC -0.538, sig. level < 0.001)
 - the more likely the school had a low percentage of nationally board-certified teachers (CC -0.469, sig. level < 0.001)
 - the more likely the school had a high percentage of teacher turnover (CC 0.242, sig. level 0.002)
 - the more likely the school had a low state score for proficiency (CC =-0.729, sig. level < 0.001) and a low state score for growth (CC=-0.160, sig. level 0.045)
2. The analysis showed that the more students with higher educational advantage in a school:
 - the more likely the school had a high percentage of teachers with more than 0-3 years of teaching experience (CC -0.511, sig. level < 0.001)
 - the more likely the school had a high percentage of teachers with 4 or more years of teaching experience (CC 0.508, sig. level < 0.001)
 - the more likely the school had a high percentage of nationally board-certified teachers (CC 0.525, sig. level < 0.001)
 - the more likely the school had a low percentage of teacher turnover (CC -0.313, sig. level < 0.001)
 - the more likely the school had a high state grade for performance (CC=0.758, sig. level < 0.001) and a high state grade for growth (CC=0.184, sig. level 0.021)
3. There was no statistically significant correlation between the proportion of high educational advantage (high SES) students in a school and the principal’s length of tenure (CC 0.141, sig. level 0.074).

Discussion and Conclusions

If parents, educators, and School Board members were asked to describe the factors they believe are important or desirable for student success, high on everyone's list would likely be principal and staff stability along with significant teacher experience and credentialing. Sadly, this analysis shows that schools with high concentrations of our less educationally advantaged families, are much less likely to have these attributes than schools with high percentages of more advantaged families. ***In these critical areas, our schools are not equitable.***

Certainly, correlation is not causality, but even a cursory review of educational research shows that the factors considered here are well researched as those critical for student learning and success^{1,2,3}. There is a highly statistically significant correlation between high needs schools and lower achievement levels. Even more disturbing, there is a statistically significant correlation between high needs schools and lower student growth. Thus, students needing more than a year's worth of growth to catch up may, instead, be falling farther behind as they continue year-to-year in a school with lower principal and staff stability and more inexperienced teachers.

Two stated core CMS beliefs⁴ are that (i) CMS is responsible for building and maintaining high performance organizations that ensure all students will successfully acquire the knowledge, skills, and values necessary for success; and (ii) CMS principals and teachers make the critical difference in student achievement.

In accordance with these beliefs, CMS pledges to:

- Provide all students with the opportunity to perform to their fullest potential, ensuring that there is no discernible difference between the achievement levels of students by race, gender or economic level
- Ensure that an effective principal leads every school
- Ensure that an effective teacher instructs each class

The League strongly supports these beliefs and commitments by the Board of Education. Accordingly, the results presented here warrant serious consideration and action.

* <http://www.cms.k12.nc.us/boe/Pages/CoreBeliefs.aspx>

Recommendations

The League of Women Voters of Charlotte-Mecklenburg urges the CMS School Board to:

- (1) Acknowledge that staffing issues, including staff stability, experience level of teachers, and percent of professionally recognized staff (such as National Board Certification), significantly impact the ability of schools to be successful with all students.
- (2) Clearly document, in easily readable form and at least annually, staffing patterns by school, with emphasis on schools serving our less advantaged children. This information would include, at minimum, the percent of first-year teachers at each school; the percent of teachers with 0-3 years of experience; the percent of teachers with 4 or more years of experience; the teacher and principal turnover rates; the percent of National Board-Certified Teachers; and student achievement measures.
- (3) Act, starting NOW, to create and/or strengthen teacher retention efforts, strong mentoring programs, and other policies and practices to support teachers in high needs schools and reverse the disturbing trends identified in the enumerated conclusions. Produce an annual report describing such efforts and results.
- (4) Re-establish an Equity Committee of interested citizens that reflects the diversity of the community, to focus on and assess progress on equity issues impacting student achievement.

The League recognizes that there are other identifiable factors including, but not limited to, attendance, extra-curricular opportunities, class offerings, student body diversity, equitable equipment, supplies, and facilities and parental involvement that must be monitored and addressed to significantly impact student achievement and provide equity for all students. By appointing a new Equity Committee, the CMS Board will have community representatives working with them to delve more deeply into these issues, advise the Board, promote understanding and action from the broader community; and accelerate the changes that must occur for CMS to meet its pledge to uphold its core beliefs. **Such acceleration is imperative, as the children adversely impacted by existing staffing patterns and related inequities are continuing their educational careers even as we deliberate.**

References

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