Evaluation of the Charlotte-Mecklenburg Schools Personalized Learning Initiative: Year 2

The Charlotte Mecklenburg Schools’ Department of Research, Evaluation, and Analytics in the Office of Accountability conducted its second evaluation of the Personalized Learning (PL) Initiative. The PL initiative began in the 2014-15 academic year with a group of students in Cohort 1 and continued in 2015-16 with a group of students in Cohort 2. Specifically, this evaluation addressed the following two research questions:

1. Do Personalized Learning students in Cohorts 1 and 2 in math and reading show more growth than a similar group of students?
   a. Do Personalized Learning students in Cohorts 1 and 2 in math and reading show more growth than a similar group of students disaggregated by subgroup?
   b. Do Personalized Learning students in Cohorts 1 and 2 in math and reading show more growth than a similar group of students disaggregated by race?

2. Do Personalized Learning teachers have greater attendance and retention rates than a similar group of teachers?

Evaluation Question 1: Student Math and Reading Outcomes

For purposes of comparing student math and reading outcomes, the treatment group sample consisted of students in Cohorts 1 and 2 who received Personalized Learning instruction in the subject measured (math or reading) during the 2015-16 school year. The comparison group consisted of students at the same schools who did not receive Personalized Learning instruction in the 2015-16 school year in the subject measured. The growth index scores for the PL Group and the Comparison Group were compared to one another. Larger differences in scores delineate larger differences in magnitude, with magnitudes larger than +/- 2 considered statistically significant. We also compared student subgroup growth index differences for the PL Group and Comparison Group in math and reading for Academically and Intellectually Gifted (AIG), Students with Disabilities (SWD), and Limited English Proficient (LEP) students, as well as by racial group.

For each cohort, on average, there was a statistically significant difference in math growth but no statistically significant difference in reading growth; therefore, the results in this evaluation often combine Cohorts 1 and 2 for ease of interpretation. Combined results indicated that, on average, students receiving PL instruction in math showed statistically significantly more growth than students in the Comparison Group in 2016. Students receiving PL instruction in reading often demonstrated a greater growth index score compared to the Comparison Group; however, these differences in growth were not statistically significant.

With regard to subgroups, students in PL Cohorts 1 and 2 who were not identified as AIG, LEP, or SWD showed statistically significantly more growth in math and reading during 2016 compared to a similar group of students in the Comparison Group. Figure 5 displays math growth by subgroup and Figure 6 displays reading growth by subgroup.
In math in 2015-16, Personalized Learning AIG students showed more growth than the Comparison Group. In reading in 2015-16, differences for AIG, LEP, and SWD subgroups in both PL Cohorts 1 and 2 were not statistically significant when compared to the Comparison groups.

In only one area did the PL subgroup demonstrate outcomes that were statistically significantly lower than the Comparison Group. In 2015-16, math growth for students identified as SWD in PL Cohorts 1 and 2 was significantly less than those students identified as SWD in the Comparison Group.

With regard to race, African American PL students in Cohorts 1 and 2 showed significantly more growth in math and reading when compared to African American students in the Comparison Group in 2015-16. Hispanic PL students in Cohorts 1 and 2 also showed significantly more growth in math compared to Hispanic students in the Comparison Group in 2015-16. In all other racial subgroups, including White and Asian, the growth differences between those in the PL Group and the Comparison Group in Cohorts 1 and 2 were not statistically significant.

**Evaluation Question 2: Teacher Engagement: Absenteeism and Retention**

Teachers who received professional development on PL standards and received coaching in at least one course in either school year 2014-15 or 2015-16 (PL Group; n=190) were compared to a similar group of teachers (Comparison Group; n=503). On average, PL teachers were absent 5.7% of yearly instructional hours and Comparison Group teachers were absent 6.2% of yearly instructional hours in 2014-15 and 2015-16. This means that the Comparison Group was absent from school, on average, ½ of a percentage point more than the PL Group, which equates to a 9% greater absence rate for the Comparison Group in relation to the PL Group. We found that a greater proportion (15.1%) of Comparison Group teachers are absent 10.1% or more of the school year compared to 10.5% of PL Group teachers. It is important to note that leaves of absence, jury duty, workshops/In-service time were excluded from the absence rate because these were days missed due to circumstances out of teachers’ control or due to attending professional development.

The analysis for teacher retention focused on the percentage of PL teachers that were retained as employees of CMS compared to non-PL teachers from March of school year 2014-15 to March of school year 2015-16. The PL Group consisted of 51 teachers who could have been retained and the Comparison group consisted of 146 teachers who could have been retained. The retention rate for PL Cohort 1 teachers is 88.2% compared to 97.9% for the Comparison Group. The overall CMS District retention rate for 2015-16 was 86.1%, which the PL Group exceeded by 2.1 percentage points. While the retention rate for PL teachers is lower than the Comparison Group, it is worth noting that the net difference is only three teachers (6 teachers not retained for PL versus 3 teachers not retained for Comparison). While both the PL Group and the Comparison Group have retention rates that are slightly greater than the district average, they still fall short of the 2017-2018 target of a 95% retention rate in the CMS 2018 Strategic Plan.

In conclusion, the results of this evaluation indicate that, on average, Personalized Learning students demonstrated greater math growth than similar non-PL students. There seems to be a positive impact of PL in math in general, and for African American and Hispanic students in particular. Generally, there was no statistically significant difference in reading between the treatment group and the comparison group. For teachers, there appears to be a positive impact of personalized learning on teacher engagement, as demonstrated by greater attendance. It is important to note that the data should be interpreted with caution due to small sample sizes for the PL group, particularly for teachers.

Despite these promising results, findings should be interpreted with caution. Causality can only be inferred to the point that teacher assignment to be trained or not trained in PL is random, and that the standardized tests used in the estimation of the EVAAS growth scores are sensitive to differences in student subject knowledge. Small sample sizes, particularly for teachers in the PL Group, mean that caution should be used in generalizing the results outside of the study sample. For those areas where findings were found to be statistically significant, it is recommend that further research be conducted.