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Montgomery County Public Schools: Curriculum Review and Analysis

Summary and Recommendations

Submitted To:
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Review Participants:
The Johns Hopkins Institute for Education Policy (Project lead)
The Johns Hopkins Center for Research and Reform in Education
Student Achievement Partners
Lengel Educational Consulting
StandardsWork

Acknowledgments

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We would also like to thank the staff, teachers, and principals whose classes and schools we visited, who participated in the focus groups, and/or who responded to the online surveys.

The Johns Hopkins Institute for Education Policy (The Institute) assembled a team of participants to engage with this study. In addition to the Institute's own experts - Dr. David Steiner, Dr. Ashley Berner, and Dr. Alanna Borklund-Young – the team included Dr. Steven Ross, Dr. Jennifer Morrison, and Dr. Betsy Wolf of the Center for Research and Reform in Education; Ms. Barbara Davidson, Executive Director of StandardsWork; Ms. Susan Pimentel and Mr. Jason Zimba, Founding Partners, and Dr. David Liben, Dr. Shelbi Cole, Ms. Marni Greenstein, Ms. Katie Keown, and Ms. Beth Cocuzza, Content Specialists, of Student Achievement Partners; and Mr. Jim Lengel and Ms. Kathi Lengel, partners, Lengel Educational Consulting. Special thanks go to Ms. Michele Mengel, the Institute's Administrative Coordinator, and to Ms. Susanna Elliott, the School of Education's Senior Grants and Contracts Analyst.

Executive Summary

Background

In 2010, the Maryland State Board of Education adopted the Common Core State Standards, later known as the Maryland College and Career Ready Standards. As a result, MCPS began revising the written, taught, and learned curriculum to align with the Maryland College and Career Ready Standards. MCPS developed the curriculum to respond to the existing conditions, feedback, and interests prevalent that time, which included: using an internally developed online platform to house curriculum and resources; leveraging teachers currently in, or recently out of, the classroom as writers of curriculum, materials, and assessments; and responding to strong interest from stakeholders in using lesson seeds and sample learning tasks as foundational elements to the curriculum.

The revised curriculum, referred to as Curriculum 2.0, has been implemented over a multiyear period. MCPS is in the fifth year of full implementation of Grades Pre-K–5 in English Language Arts (ELA) and Mathematics, and the third year of full implementation in Grades 6 through 8. Board of Education Policy IKA, *Curriculum*, encompasses the written, taught, and learned curriculum. The policy requires reviews of curriculum content areas on five-year cycles. The elementary curriculum met the five-year review point this year, creating an opportune time for an external review of the curriculum.

The Research Team

In Spring 2017, Montgomery County Public Schools (MCPS) awarded a contract to the Johns Hopkins School of Education to evaluate Curriculum 2.0. The Johns Hopkins Institute for Education Policy ("the Institute") served as project lead. The Institute brings deep experience in the curriculum domain to this work; its senior partners are currently advising seven states and numerous districts on curriculum policy. The Johns Hopkins Center for Research and Reform in Education ("CRRE"), which has directed multiple I3 grants from the USDOE, served as statistical specialists in both the project design and the survey analysis. The Institute brought additional experts to complement its team, specifically Student Achievement Partners (the organization that lead-authored the Common Core State Standards); Lengel Educational Consulting, which has advised more than 70 school districts on issues of pedagogy and instruction; and StandardsWork, which has created professional learning tools and materials for school districts, state agencies, and national organizations for 25 years. In the remainder of this report, reference to "the Institute team" represents the collective judgment and expertise of all partners on this project.

Rationale for the Audit

Curriculum matters. High-quality research suggests that using best-in-class instructional materials can improve student learning even more than other, more well-known, interventions such as expanding preschool programs, giving merit pay to successful teachers, decreasing class sizes, or increasing the number of charter schools in a district.[1] Despite this, few states and districts view the curriculum as an important policy lever for change.

[1] (Chingos and Whitehurst 2012), (Boser, Chingos, and Straus 2015)

MCPS is an exception. MCPS has a longstanding history of designing and implementing instructional materials that challenge students, empower educators, and narrow achievement gaps. Curriculum 2.0 was one of the earliest curricula developed in the Common Core era. The curricular landscape has changed since then; research on the effects of standards is significant; new instructional models have entered the market.

In Montgomery County, curriculum is routinely reviewed in alignment with Board of Education policy (every five years), as are external resources that are available on the market. Coinciding with the arrival of a new superintendent and after approximately five years of implementation of Curriculum 2.0, an external review of the written, taught, and learned curriculum was conducted. This periodic review provides for internal controls that cause MCPS to reflect upon and modify curriculum as conditions demand. MCPS is not alone in the effort to ensure that curriculum is regularly modified and aligned with state or national standards. Many large districts struggle with the decision to continually develop and update curriculum or purchase curriculum, which is a common occurrence across the United States. The current project (RFP 4395.1) is designed to review MCPS's written, taught, and learned curriculum in light of the state's academic standards, the experience of other comparable districts, and the district's expectations for excellence and equity.

Summary of the Curriculum 2.0 Audit Process

The Institute team undertook a 360° evaluation of Curriculum 2.0, involving multiple, overlapping perspectives and data collections. These can be summarized as follows:

1. A formal alignment evaluation comparing Curriculum 2.0 materials in math and ELA, Kindergarten through 8th-grade, against the multiple requirements of the Maryland state standards.

2. An evaluation of classroom practices, involving on-site classroom observations; analyses of student work; survey data of the views of stakeholders; and focus groups with teachers, principals, and central office staff. The purpose of this review was to listen to those who worked with Curriculum 2.0 in schools – and to examine how the use of Curriculum 2.0 in MCPS classrooms influenced the delivery of standards-based education.

3. An evaluation of MCPS 3rd- through 8th-grade PARCC scores over the past three school years. The purpose was to identify the specific grades, subjects, and student groups where proficiency levels were outliers in comparison to MCPS students in surrounding grade levels. The evaluation also compared MCPS PARCC scores to comparison school districts with identifiable sub-groups of similar proportion and demography to those in MCPS.[2]

[2] In Maryland: Prince George's County, Baltimore County; Anne Arundel County, and Howard County. In Colorado: Jefferson County and Cherry Creek County. Additional: Washington, D.C.

Overall Conclusions

1. The evaluation surfaced several positive aspects of Curriculum 2.0. Among them:

    - Most of the observed lessons, in both ELA and math, drew upon the learning goals from Curriculum 2.0.
    - Math classrooms use resources from Curriculum 2.0 the majority of the time.
    - The middle school math materials of Curriculum 2.0 approach alignment to the high-level requirements of the Maryland College and Career Ready Standards.

2. The evaluation also surfaced a number of consistent challenges associated with Curriculum 2.0 that were confirmed across each domain of the inquiry. These challenges are elaborated in the section below.

The Evaluation Findings

Formal alignment analysis. The instrument of analysis was the Instructional Materials Evaluation Tool (IMET), created by Student Achievement Partners, which is regarded as the national gold-standard instrument for curricula alignment analysis. EdReports, for instance, draws upon the IMET tool in all of its published curricular evaluations.

- Based on the materials reviewed, the ELA curriculum in K through 8th grade must be better aligned to central features of the Maryland College and Career Ready Standards.
- The math curriculum in K through 5th grade must be better aligned to central features of the Maryland College and Career Ready Standards.
- Teachers expressed concerns about Curriculum 2.0. They find the curriculum misaligned to the needs of many of their students, difficult to navigate on the technology platform and requiring more opportunities for students to develop a depth of understanding.
- While most teachers use Curriculum 2.0, they supplement it with additional lessons and assignments from other sources.

Student work samples. The instrument of analysis was an MCPS-appropriate version of the Student Work Analysis Tool that is part of Student Achievement Partners' Instructional Practice Toolkit (IPT). In total, the team reviewed 36 different assignments and 530 student work samples in math, and 34 assignments and 455 student work samples in ELA.

Overall, the student work samples indicate a misalignment between the learning standards and most student assignments.

Math:

- Student work samples did not consistently show mastery of the learning standard. Student work samples show that fewer than a third of students master their assignments in either ELA or math, although mastery in mathematics is higher than in ELA.
- In K through 2nd-grade math, student work samples did not consistently show full or close to full mastery of the targeted standard.

ELA:

- ELA lessons did not consistently show alignment to the targeted standard. In the analysis of student work samples, fewer than a quarter of students show complete mastery of the assignments' targeted standards.
- In the majority of student work samples analyzed, students did not consistently show mastery in the comprehension of their texts.

Focus groups analysis. The instrument of analysis was an MCPS-appropriate version of the Common Core Knowledge and Practice Survey developed by Student Achievement Partners. In total, the research team conducted 52 focus groups and interviews at 20 MCPS elementary and middle schools with 324 educators – including both teachers and central staff - collecting 2,441 comments.

- The focus groups reflect agreement about the curriculum's strengths and weaknesses. Teachers find the curriculum to contain too many required lessons and assessments.
- Overall, the participating teachers do not have a positive view of Curriculum 2.0.
- Teachers note several missing elements that are essential to understanding upcoming lessons in both math and ELA. Some teachers attribute this problem to the pace of the curriculum, which does not allow for practice. In fact, the need for students to practice was mentioned repeatedly.
- Insufficient knowledge-building in ELA. Many teachers feel the curriculum "miss[es] the opportunity to build knowledge" across disciplines.
- While most teachers use Curriculum 2.0 every day, they supplement it with additional lessons and assignments from other sources.
- Teachers expressed concern that Curriculum 2.0 does not adequately meet the needs of their special education students or students with limited English proficiency.

Classroom observations. The instrument of analysis was the Instructional Practice Guide (IPG) developed by Student Achievement Partners. In total, the research team conducted observations in 20[3] schools across the district, encompassing 14 elementary schools and 6 middle schools. The team observed 77 classrooms for 20–30 minutes each: 38 ELA classrooms[4] and 39 math classrooms.[5]

Overall, classroom observations show that teachers struggle to adapt lessons to students' needs, especially in ELA.

Math:

- Many teachers had difficulty making mathematical content clear in their lessons and making "the mathematics of the lesson explicit through the use of explanations, representations, tasks, and/or examples". Teachers across all elementary- and middle-school grades make mathematical errors; significant errors occurred in 18 percent of the classrooms, and minor mathematical errors in 23 percent of the classrooms.

[3] As stated above, MCPS selected 8 of these schools based on their demographics and historical performance; the research team selected the remaining 12 using principal components analysis and randomized stratified sampling methods.
[4] The grade levels of the observed classrooms are as follows: 13 in K–2; 13 in 3–5; and 12 in 6–8.
[5] The grade levels of the observed classrooms are as follows: 14 in K–2; 13 in 3–5; and 12 in 6–8.

ELA:

- *Text complexity.* Students are not consistently exposed to grade-level texts across 3rd through 8th grade. Only approximately half of the texts observed are at or above grade-level, and half are below grade-level.
- *Foundational skill instruction*. Fewer than half the lessons in K through 2nd grade address foundational skills. Five out of 11 lessons in K through 1st grade address foundational skills, and none of the 2nd-grade lessons address foundational skills. The foundational skills primarily target high-frequency words.
- *Textual evidence.* Most questions and tasks are not text-dependent and do not require evidence to complete.

Teacher survey. The survey questions were derived from the RAND Corporation's American Teacher Panel study with MCPS-appropriate modifications. In total, 1,852 teachers responded to the survey. Fifty-six percent of respondents were from elementary schools, 44 percent from middle schools. The respondents were seasoned educators, having taught an average of 15 years.

- ELA teachers use non-Curriculum 2.0 materials more frequently than they do Curriculum 2.0 materials. Ninety percent report using materials they personally developed, and 70 percent used materials they personally selected from the Internet, daily or almost daily.
- While math teachers use Curriculum 2.0 materials more frequently than do ELA teachers, approximately the same percentage of math teachers (87 percent) use self-developed materials, and only slightly fewer use materials selected from the Internet, daily or almost daily.
- Teachers do not believe Curriculum 2.0 adequately meets the needs of special education or ELL students.
- Teachers report that they spend time on reading and skill development, but this was not documented in the classroom observations.

MCPS's PARCC results

- Proficiency levels in 3rd- and 6th-grade ELA are lower than those in surrounding grades.[6] "Control districts do not uniformly show this performance 'dip.'
- Proficiency levels among students with limited English are lower in each grade level than in the previous grade. These results are particularly acute in ELA. In several control groups of ELL student populations, these students scored higher than they did in MCPS.
- The trajectory performance of certain subgroups of students in MCPS is of concern. In Math, 38 percent of 3rd-grade African Americans students in MCPS reach proficiency on the PARCC. By 6th grade, the percentage of this same subgroup reaching proficiency is 19 percent. In ELA, while proficiency rates in a number of grades has risen over the last three years, 8th-grade proficiency is flat at 31 percent.
- Overall, student performance in literacy is stronger than in mathematics.

[6] Specifically, 3rd grade ELA proficiency levels are lower than 4th and 5th grades; 6th grade proficiency levels are lower than the two years before or after. In addition, 7th grade math proficiency levels are lower than the two preceding years. However, caution is in order in interpreting the math results, given the far higher percentage of students now moving to Algebra in earlier grade levels than before.

Recommended Next Steps

The RFP requested that the research team provide guidance on the policy implications of the findings and recommendations. Our counsel is based on the experience of other districts engaged in curricular transitions and on the research base that supports the effective implementation of high-caliber curricula.

Considerations:

1. There is a strong case for beginning a transition away from Curriculum 2.0 and towards externally developed evidenced-based researched and reviewed instructional materials. Several ELA and math curricula rank higher than Curriculum 2.0 on standards-alignment metrics; many are available as Open Educational Resources (OER materials on the Web are downloadable for free); and several offer other strong advantages in terms of materials for struggling or advanced students, as well as other resources for Special Needs and English Language Learners.

2. There is also a strong case for implementing new materials across several academic years. For a school district of the size of MCPS, the need to provide multiple levels of stakeholder engagement, logistical support, assistance for principals and curriculum directors, and above all extensive up-front and ongoing professional assistance and development for teachers, creates a major implementation challenge. Failure to adequately plan and execute effectively on these elements of transition will undermine – to varying but serious degrees – the efficacy of the transformation. Research on major instructional transitions – from the 1990s onwards – strongly supports this approach.[7] Here is the conclusion of a recent study of Core Knowledge:[8]

> *Multilevel support for change was required for Core Knowledge to be successfully implemented. Successful implementation relied on instructional leadership from the principal, teacher willingness to change, and support from the district…Successful implementation also relied upon…teacher-planning time, as well as the organization of time, space, and professional development.*

[7] See for example, Youree, D. G. (1998). The implementation of core curriculum: A case study (Order No. 9907867). Available from ProQuest Dissertations & Theses Global. (304482675). Retrieved from https://search.proquest.com/docview/304482675?accountid=11752.

[8] Stringfield, S., A. Datnow, G. Borman, and L.T. Rachuba. 2000. "National Evaluation of Core Knowledge Sequence Implementation: Final Report." Baltimore, MD: Johns Hopkins University Center for Research on the Education of Students Placed at Risk. https://eric.ed.gov/?id=ED451282.

3. Professional development for teachers on the new materials is critical. Strong research shows that more than half of the impact of a curriculum adoption is dependent on *how* teachers implement the new materials. Additional research shows that the same curriculum, implemented with greater or lesser fidelity, can range in its impact on student outcomes from being negative to adding more than an average of twelve months' worth of learning in a single academic year.[9]

Survey data indicate that, in general, teachers' use of a district approved curriculum varies, with a sizeable share of teachers indicating less frequent use of the district curriculum and instead relying on other resources that they create themselves or find online.[10] This data makes it clear that to design, structure and support a genuine, large-scale adoption and ***use*** of a new curriculum across a large district with some 6,000 teachers is a far more demanding task than simply incentivizing a given curriculum as the "official" set of instructional materials for the district.

[9] Steiner, David. 2017. "Curriculum Research: What We Know and Where We Need to Go." StandardsWork. https://standardswork.org/wp-content/uploads/2017/03/sw-curriculum-research-report-fnl.pdf.

[10] Opfer, V. Darleen, Julia H. Kaufman, and Lindsey E. Thompson. "Implementation of K–12 state standards for mathematics and English language arts and literacy." *RAND Corporation* (2016).