Quality Review Report

2018-2019

The Brooklyn School for Math and Research
High school 32K168
400 Irving Avenue
Brooklyn
NY 11237

Principal: Perry Rainey

Dates of Review:
April 4, 2019 - April 5, 2019

Lead Reviewer: Sonja Webber-Bey
The Quality Review Report

The Quality Review is a two-day school visit by an experienced educator. During the review, the reviewer visits classrooms, talks with parents, students, teachers, and school leaders and uses a rubric to evaluate how well the school is organized to support student achievement.

The Quality Review Report provides a rating for all ten indicators of the Quality Review Rubric in three categories: Instructional Core, School Culture, and Systems for Improvement. One indicator is identified as the Area of Celebration to highlight an area in which the school does well to support student learning and achievement. One indicator is identified as the Area of Focus to highlight an area the school should work on to support student learning and achievement. The remaining indicators are identified as Additional Finding. This report presents written findings, impact, and site-specific supporting evidence for six indicators.

Information about the School


School Quality Ratings

<table>
<thead>
<tr>
<th>Instructional Core</th>
<th>Area</th>
<th>Rating</th>
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<tbody>
<tr>
<td>To what extent does the school...</td>
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</tr>
<tr>
<td>1.1 Ensure engaging, rigorous, and coherent curricula in all subjects, accessible for a variety of learners and aligned to Common Core Learning Standards and/or content standards</td>
<td>Area of Celebration</td>
<td>Well Developed</td>
</tr>
<tr>
<td>1.2 Develop teacher pedagogy from a coherent set of beliefs about how students learn best that is informed by the instructional shifts and Danielson Framework for Teaching, aligned to the curricula, engaging, and meets the needs of all learners so that all students produce meaningful work products</td>
<td>Additional Finding</td>
<td>Proficient</td>
</tr>
<tr>
<td>2.2 Align assessments to curricula, use on-going assessment and grading practices, and analyze information on student learning outcomes to adjust instructional decisions at the team and classroom levels</td>
<td>Additional Finding</td>
<td>Proficient</td>
</tr>
</tbody>
</table>
### School Quality Ratings continued

#### School Culture

*To what extent does the school...*

<table>
<thead>
<tr>
<th>Area</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1.4 Maintain a culture of mutual trust and positive attitudes that supports the academic and personal growth of students and adults</td>
<td>Additional Finding Well Developed</td>
</tr>
<tr>
<td>3.4 Establish a culture for learning that communicates high expectations to staff, students and families, and provide supports to achieve those expectations</td>
<td>Additional Finding Well Developed</td>
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#### Systems for Improvement

*To what extent does the school...*

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<tr>
<th>Area</th>
<th>Rating</th>
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<tbody>
<tr>
<td>1.3 Make strategic organizational decisions to support the school’s instructional goals and meet student learning needs, as evidenced by meaningful student work products</td>
<td>Additional Finding Well Developed</td>
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<tr>
<td>3.1 Establish a coherent vision of school improvement that is reflected in a short list of focused, data-based goals that are tracked for progress and are understood and supported by the entire school community</td>
<td>Additional Finding Well Developed</td>
</tr>
<tr>
<td>4.1 Observe teachers using the Danielson Framework for Teaching along with the analysis of learning outcomes to elevate school-wide instructional practices and implement strategies that promote professional growth and reflection</td>
<td>Additional Finding Proficient</td>
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<tr>
<td>4.2 Engage in structured professional collaborations on teams using an inquiry approach that promotes shared leadership and focuses on improved student learning</td>
<td>Area of Focus Proficient</td>
</tr>
<tr>
<td>5.1 Evaluate the quality of school-level decisions, making adjustments as needed to increase the coherence of policies and practices across the school, with particular attention to the CCLS</td>
<td>Additional Finding Proficient</td>
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</tbody>
</table>
Area of Celebration

<table>
<thead>
<tr>
<th>Quality Indicator</th>
<th>1.1 Curriculum</th>
<th>Rating:</th>
<th>Well Developed</th>
</tr>
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</table>

Findings
The school has clearly defined criteria, aligned to the standards, for what it means to exit a grade and to attain enduring understandings and key skills. Teachers across grades and subjects use student work and data to plan and refine curricula and academic tasks.

Impact
The school curricula are aligned to Common Core Learning Standards and/or content standards, coherent across grades and subjects, and accessible to a variety of learners, thus promoting college and career readiness for all students.

Supporting Evidence

- Across the majority of classrooms, unit plans and pacing calendars reveal alignment to the Common Core Learning Standards and/or content standards. Use of source materials like College Board, New Visions, Engage NY, Algebra for All, AP for All and previous Regents enrich structured planning documents which strategically integrate the instructional shifts, such as academic vocabulary, text-based answers, writing from sources, fluency and dual intensity between understanding and practice. The school offers towards graduation all the NYS high school Regents-accredited courses, including algebra II, physics, U.S. history and government, and Chinese. In addition, it offers advance placement (AP) classes leading to earned college credits in areas such as biology, calculus, and U.S. history. Students’ journey through the school is crafted by specific assignments at each grade level, some participating in in-depth AP research skill-building courses, and culminating in a capstone research project when they are seniors. Courses avail opportunities to a variety of learners, providing access to the curricula and promoting college and career readiness for all students.

- For instance, in a unit plan for a Spanish language course, content standards are identified, specific vocabulary is listed and instructional strategies for building fluency are categorized as reading, listening, speaking, and writing. A ninth grade statistics unit plan is driven by the Common Core, identifies associated vocabulary, delineates a series of practice exercises along with a listing of the enduring understandings earmarked for student learning. Additionally, an eleventh grade AP seminar-course pacing calendar includes Common Core standards for the unit, and planned student annotations of a variety of sources for use in a written slide presentation. Furthermore, the unit plan for a tenth grade AP composition class is adapted from the DOE’s AP Language & Composition Barron’s Book, wherein students are to seek out evidence for their writings. The unit also has guiding ‘major understandings’ which are built on from previous units’ practice to a culminating assessment performance of a high-level AP essay. Hence, through attention to Common Core and integration of the instructional shifts across grades and subjects, school staff has built a coherence throughout the curricula that promotes college and career readiness.

- A schoolwide daily lesson template, the “Fool Proof” lesson plan, organizes teachers’ instructional delivery with an aim supported by the Common Core, designation of learning strategies refined with references to specific student work achievement and/or data from sub-groups, over-arching Danielson Framework for Teaching sections, such as Engaging Students in Learning, Using Questioning & Discussion Techniques and Using Assessment in Instruction. It concludes with homework or lesson extensions. This planning and revising ensures cognitive engagement for a diversity of student learners, including individuals, groups of students from lowest-to-highest-achieving, English language Learners (ELLs) and students with disabilities.
Area of Focus

<table>
<thead>
<tr>
<th>Quality Indicator:</th>
<th>4.2 Teacher Teams and Leadership Development</th>
<th>Rating:</th>
<th>Proficient</th>
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Findings

Teacher teams implement systems to monitor a variety of student data and classroom practices. School leaders and teachers are able to identify distributed leadership structures that are in place in the school’s day-to-day operations.

Impact

Professional collaborations typically result in improved teacher practice, fostering progress towards school goals; however, the school’s approach limits current mastery of goals for groups of students. Additionally, teacher voice does not yet play an integral role in key decisions.

Supporting Evidence

- A review of teacher team minutes revealed an action research approach to further student learning, and look into student work for groups of students whom teachers share. At the end of semesters, teachers review assessment and credit accumulation data to ascertain which students are on a contending path for Regents’ success and progress towards goals. Documents reviewed during the visit showed teacher teams reflecting on student performance during class time, then relying on discussion and digital sources to gather insight into effective use of paraprofessionals, developing more effective lessons and suggested formats for increasing student engagement. Characteristically, this results in improved teacher practice, but does not yet provide opportunities for students to master goals within the learning cycle.

- A team of special education staff used a protocol while conducting a meeting to analyze the current needs of specific students receiving supports and services. As these were students that the teachers shared, their reflections were considered, as both the guidance counselor and assistant principal sought to prioritize students needing to continue or adjust accommodations, those who may no longer need assigned services and/or devices, and if one student was challenged additionally because of her ELL needs. A spreadsheet for the Class of 2021, tenth graders, was reviewed to ensure testing modifications would be in place for upcoming mid-semester exams. While the team sought to support students, the forum had not yet included students’ current formative data or authentic student work samples as corroboration to further their conclusions, subsequently missing an opportunity to ensure their plans would lead to mastery of goals for groups of students.

- Teachers meet in subject department cohorts with a lead assistant principal, who shares insights across the grades, facilitates analysis of data, and turn keys best practices. Teachers interviewed agreed there is an open door policy for them to bring questions and ideas to school leaders, and make suggestions. One newer teacher shared, “A lot of classes are co-taught. At a previous school I felt lonely, here, there is always another teacher to talk to and share ideas”. There are lead teachers who sit on a Measures of Student Learning (MOSL) committee with school leaders to determine the most effective assessments to use across the school that will provide credible measures of student progress. Across the school, teachers have a leadership structure and a voice in key decisions that affect student learning, however, there is not yet the capacity wherein teachers’ play an integral role in the processes.
Findings
Across classrooms teaching practices, such as Socratic seminars and viewing of video clips, supply multiple entry points so that all learners, including English Language Learners (ELLs) and students with disabilities, are engaged in discussion and tasks.

Impact
Classrooms reflect high levels of student thinking and participation, so that all learners produce meaningful work products.

Supporting Evidence

- Across classrooms, teachers displayed lesson aims and Common Core or content standards associated with the current lesson, as a baseline for student learning outcomes. For example, in a Chinese language class, the teacher displayed the aim, language objectives, and a Language Other Than English (LOTE) standard on a SmartBoard for all students to see. A listing of vocabulary words was distributed for students needing additional support. A video with audio was shown as a model for appropriate language structure and intonation, and several students were given an opportunity for repeated verbal practice with a partner. Later in the lesson, as individuals and pairs of students worked on a written response to an exit ticket task, one student approached the teacher’s desk asking to see her laptop screen instead of the larger SmartBoard. The teacher set up the laptop for his use, he sat down and attended to his work. Hence, using multiple entry points, all learners were able to engage in the challenging tasks and demonstrate their thinking skills. Another example was viewed in an AP biology class. This teacher also displayed the lesson aim and standards, and showed multiple models for solving Hardy Weinberg problems associated with dominant and recessive genes. A ‘traffic light’ assessment spawned responses that the teacher used to determine who would need additional support for assignment tasks. Each small group formed had an ‘expert’ leader included. One leader guided her group step-by-step through a solution method. In another group, the teacher stopped in and reread the question to students, then asked clarifying questions, such as, “If you know what ‘q’ is, then what’s ‘p’ and ‘r’?” The teacher followed this by suggesting a specific next step. Circulating to a third group, the teacher briefly checked student understanding of key vocabulary terms, then chunked steps to follow, beginning with, directions to find the solution ‘p’ for each population included in their set of data. All learners, including ELLs and students with disabilities, participated, demonstrated higher-order thinking, and were able to produce meaningful work products.

- Students in a tenth grade global history class engaged each other through a Socratic seminar technique targeting Iran’s Islamic Revolution. Roles for moderator and timekeeper were determined before the discussion began. Student participants were prepared with an article flowered with annotations and sticky note questions. As the moderator kept track of student voices on a checklist, the discussion amplified, until the timekeeper called, “stop.” Students in this class supported their high levels of thinking with text-based responses, and demonstrated ownership of their learning, a practice not yet developed across the school.

- Students in an Integrated Co-Teaching chemistry class collaborated in pairs manipulating wires and bulbs in a virtual lab as they explored and discussed circuits and the conductivity of different metals, as they aimed to answer the posed lesson question, “How can you use a redox reaction as an energy source?” Later during a class share, in response to a teacher question, a student was able to name specific metals, give reasons for his choices, and describe possible results, for selections to form a circuit with the brightest possible bulb. A diversity of learners in this class reflected high levels of thinking and participation.
Additional Finding

<table>
<thead>
<tr>
<th>Quality Indicator:</th>
<th>2.2 Assessment</th>
<th>Rating: Proficient</th>
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Findings

Teachers use and create assessments and rubrics that align to the school’s curricula, consistently check for student understanding, and provide opportunities for learners to self-assess.

Impact

Teachers provide relevant feedback around student performance, during classes akin to seminars and research projects, while making effective instructional adjustments to meet the learning needs of all students.

Supporting Evidence

- Chosen assessments align to the varied curricula resources in use at the school, such as New Visions, College Board and EngageNY, as well as previous Regents’ materials. For example, a U.S. history assessment on the Cold War downloaded from the Stanford History Education Group, focused on students’ skills in analyzing modified primary documents. From College Board materials, an AP seminar class utilized their Individual Multimedia Presentation (IMP) Rubric for a student quiz. Students watched a sample multimedia presentation and graded it using such rubric categories as establish argument, engage audience, understand and analyze context, and reflect. The ELA department utilized a past Common Core Regents exam to assess across classes for students’ text analysis skills. Results of assessments are shared with students through Skedula and periodic progress reports thus, providing actionable feedback regarding their achievement.

- Students use rubrics as they engage their work, then receive grades based on the rubric indicators. For instance, a student’s portfolio research project, included an oral presentation rubric graded for his presentation, such as eye contact, voice, body language and preparation. An argumentative essay viewed, had a point-system rubric attached that had been completed for skills assessed, such as content and analysis, command of evidence, organization and style and control of conventions. Students interviewed were well aware of the role rubrics hold in their learning. One senior commented, “In English we get the rubric during planning, we can improve as we go.” A ninth grader shared, “They’re used in all my classes. The teachers will explain, what I did well and next steps.” Often accompanying rubrics are teachers’ written comments. For example, one glow written on an AP composition essay acknowledged the student’s “great insight and analysis,” while a grow for that student referenced “some lapses in grammar and repetitive words.” Math rubrics viewed utilized the Exemplars templates, indicating student performance as expert, practitioner, apprentice, or novice. Rubric use was evident across the building, resulting in students being provided with actionable feedback on their work product outcomes.

- In a statistics class, while student groups performed ‘significance tests’ on sets of data, the teacher circulated asking questions and responding to misconceptions. At one point he paused the work to inquire and share across the class, “What was the first number we put in? What does the ‘n’ represent? Which number will we choose for the conclusion?” As student responders answered those questions, other students looked down at their work, some making corrections. Students at the end of a chemistry class wrote their descriptions about the direction of electron transfer in an electrochemical cell onto an exit ticket. Students also consistently assess themselves. Evidence of student reflection templates and reflection statements were viewed throughout classes and in portfolios. After participating in a Socratic seminar, students used a rubric to self-assess their involvement based on categories such as conduct, listening, reasoning, and speaking. These kinds of checks for understanding and student self-assessment lead teachers to make effective instructional adjustments to meet the needs of all students.
### Findings

School leaders consistently communicate high expectations for professionalism and instruction, guided by the Danielson *Framework for Teaching* for staff, and has established a culture for learning in the building that systematically sets unified, clear expectations for all students.

### Impact

Mutual accountability exists amongst school leaders and staff that connects high expectations with training, thus empowering them to provide clear, focused feedback, along with guidance and advisement to ensure that students, including high-need sub-groups, own their school experience and are prepared for their next level.

### Supporting Evidence

- School leaders distributed an employee handbook, a calendar and the “Fool Proof” lesson plan template. Early in the year, staff engaged in an analysis of data trends, such as an increase in college acceptance rates from 97 percent in school year 2016 to 2017 to 100 percent in school year 2017 to 2018, as well as improvement areas for focus, one being enhancing student achievement for the ELL students, and another being a lens on the development of teacher questioning. A teacher from the Humanities department recalled, “I posted the *Depth of Knowledge* (DOK) poster required, and then placed a wheel that turns on it, so when it lands on a deeper level, I ask students a deeper question, like synthesis for example.” High expectations are consistently communicated during Wednesday department meetings. Teachers interviewed agreed that school leaders have an open door policy, one explaining, “Every morning I am welcomed by administration, they come to see if I need help and offer strategies when I’m overwhelmed. Another teacher added, “If something is pushed back, you don’t feel intimidated to bring it to their attention and they will help get it done.” A third teacher recalled, “At each year’s end an anonymous teacher survey is conducted on what administration could improve,” resulting in a culture of mutual accountability for achieving shared high expectations.

- One assistant principal is sent to a variety of trainings throughout the year to stay current on the necessary elements needed to produce high quality lesson plans and plan effective instruction. English as a New Language (ENL) teachers are also sent to trainings to learn best practices and instructional strategies to improve the academic outcomes for ELL students. In turn, the assistant principal and ENL teachers turnkey what they learned to the entire staff at schoolwide sessions, empowering teachers across the building to improve ENL academic outcomes, which is one of the year’s Comprehensive Education Plan (CEP) goals.

- The Brooklyn School for Math and Research website, B-SMaRt, contains numerous pages informing students of the school’s high expectations which are systematically communicated and updated. A school newsletter is distributed to reinforce expectations and to share celebrations of achievements. Electronic emails and texts, as well as phone calls alert students to pending deadlines and event timeframes. Counselors, attendance staff and special education staff work in teams, and as case managers, to communicate expectations to individuals and groups of students. One student, who had a history of poor attendance prior to coming to the school, was assigned for support. Now a senior, the student comes to school on time, and has decided to go to college for marketing based on a conversation he had with the principal. All students prepare for and lead student-led conferences. Every senior participates in an internship project and completes a *Capstone* research paper. These practices have established a culture for learning that offers clear, focused, and effective feedback to ensure all students own their educational experience and are prepared for the next level.
Additional Finding

**Quality Indicator:** 4.1 Teacher Support and Supervision  
**Rating:** Proficient

### Findings

School leaders support the development of all teachers through frequent cycles of observation with effective feedback in the form of commendations and clear recommendations, using the Danielson *Framework for Teaching* and analysis of learning outcomes as guides.

### Impact

Across the school, school leaders promote professional growth and reflection, thus elevating schoolwide instructional practices.

### Supporting Evidence

- School leaders organize frequent cycles of classroom observations during discussions in bi-weekly cabinet meetings, and norm expectations for effective feedback to teachers. Assistant principals meet weekly to share observations of school climate, student engagement, and to collaborate on strategies for supporting teacher growth. A digital platform for sharing observation reports, including feedback enables each administrator to check-in with the ongoing concerns and/or suggestions of their fellow administrators. The principal, guided by an Effective School Leadership CEP goal, facilitates at department meetings on a rotating basis, reviewing student data and collaborating with staff on the analysis of learning outcomes. The varied support of school leaders results in elevated schoolwide instructional practices and staff reflection on professional growth.

- For example, a new English as a New Language (ENL) teacher, early in the school year, was commended for his close proximity to his targeted ELL students and it was recommended students share or discuss topics within their small groups, before one person from the group shares out to the whole class thus, giving more students an opportunity to engage the task discussion. Later in the year, the same ENL teacher received a commendation for providing students with translated copies of a project’s instructions and strategically writing words and phrases on a carried whiteboard to keep ELL students abreast with note taking. Furthermore, a recommendation was made to use a traffic light signal and/or a thumbs up signal for which students could show their level of understanding during lessons, and hence, their level of engagement. Another new ENL teacher, received positive feedback for exhibited organization of rotating groups for a class debate, and a recommendation to implement an accountability factor for any student speaking over designated speakers, such as a point deduction; then later in the year, this teacher received a commendation for providing differentiated tasks for students on different levels of English proficiency, and a recommendation to also have an extension assignment prepared for any student finishing their work early, to establish a bell-to-bell active learning environment. These examples represent the kinds of feedback school leaders offer, articulating clear expectations with suggested strategies that result in professional growth.

- Analysis of classroom data from the previous years shows a progression of teacher questioning skills, with this year’s focus on designing and posing questions that assess student learning. To facilitate growth in this area, the principal led a staff discussion in the fall focused on the Danielson *Framework for Teaching*, with an emphasis on the component around questioning, and then school leaders followed up in observation feedback. For example, one humanities teacher was told of the onslaught of level three and level four DOK questions posed to her student presenters and how that was appropriately preparing them for the end-term AP exam. Across the school, teachers are supported with clear feedback that supports their development and spawns professional reflection.