Quality Review Report

2016-2017

City Polytechnic High School of Engineering, Architecture, and Technology

High school 13K674

105 Tech Pl.
Brooklyn
NY 11201

Principal: Judie Hartmann

Dates of Review:
December 21, 2016 - December 22, 2016

Lead Reviewer: Tracie Benjamin-Van Lierop
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

City Polytechnic High School of Engineering, Architecture, and Technology serves students in grade 9 through grade 12. You will find information about this school, including enrollment, attendance, student demographics, and data regarding academic performance, at http://schools.nyc.gov/Accountability/tools/report/default.htm.

School Quality Ratings

<table>
<thead>
<tr>
<th>Instructional Core</th>
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<tbody>
<tr>
<td><strong>To what extent does the school...</strong></td>
<td><strong>Area</strong></td>
<td><strong>Rating</strong></td>
</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>Additional Finding</td>
<td>Proficient</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>Area of Focus</td>
<td>Developing</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>Developing</td>
</tr>
</tbody>
</table>
### School Quality Ratings continued

#### School Culture

<table>
<thead>
<tr>
<th>To what extent does the school...</th>
<th>Area</th>
<th>Rating</th>
</tr>
</thead>
<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>Area of Celebration</td>
<td>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</td>
<td>Proficient</td>
</tr>
</tbody>
</table>

#### Systems for Improvement

<table>
<thead>
<tr>
<th>To what extent does the school...</th>
<th>Area</th>
<th>Rating</th>
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</thead>
<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</td>
<td>Proficient</td>
</tr>
<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</td>
<td>Proficient</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</td>
<td>Proficient</td>
</tr>
<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>Additional Finding</td>
<td>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</td>
<td>Developing</td>
</tr>
</tbody>
</table>
Area of Celebration

| Quality Indicator: | 1.4 Positive Learning Environment | Rating: | Well Developed |

Findings
The school’s approach to culture-building, discipline, and social-emotional support is informed by a theory of action. Structures are in place so that each student is known well by at least one adult who helps to personalize attendance supports and coordinate social-emotional learning and youth development.

Impact
A safe and inclusive culture supports progress toward school goals, where student voice is meaningfully involved in decision-making. Guidance and advisement supports impact students’ academic and personal behaviors.

Supporting Evidence

- The school leaders make sure that all students are known and are developing an action plan to meet the needs of their students. Every counselor is assigned a grade level and students check-in monthly with their early college counselor. Additionally, students with disabilities and English Language Learners (ELLs) have a caseload manager who they are able to meet with and share any and all concerns. Teachers report that there has been a decrease in the number of students who used to need frequent breaks throughout the day and are able to remain on-task longer and self-regulate their behavior. According to incident and suspension data reports, the number of total incidents decreased from 90 to 23 and principal suspensions decreased from 23 to five from the 2015-2016 school year to the date of this review.

- Teachers and school leaders report that students have access to everyone from the principal to their counselors, and teachers. They email or stop in offices or classroom all the time. The school has run a summer bridge program for incoming students for three years in a row to further support its belief that every student is known well from the moment they enter the school. There is an expectation that students come to the school knowing someone. The school’s 2015-2016 NYC Department of Education School Survey Report indicated that 75 percent of students agreed that the school offers a wide variety of programs, classes, and activities to keep them interested in school. Students also strongly agreed that students with disabilities are included in all student activities.

- Student government members meet bi-weekly to surface issues with the school’s administration and work together to overcome any issues. Students wanted clubs that addressed the needs of their female population and, as a result, City Girls Rock, a celebration of women that culminates in a ceremony hosted by students, was implemented. Students worked in collaboration with the school’s business manager on a proposal to a neighborhood vendor to provide the refreshments on their limited budget. Students appreciate the focus and open door policy that the new administration has embraced. This is impacting the morale of all students, particularly the female students, who at times had felt overlooked in a male dominated student population.

- Counselors track student attendance and students who fall below 90 percent. The school’s attendance average at the time of the review was above the city’s average of 89 percent. When there is a concern regarding any social-emotional learning or academic concern such as academic interventions, attendance, pre-suspension, or a status update, a meeting is scheduled with the student, parent, counselor, teacher, leadership, and/or college liaison. The conference notes, next steps, and outcome are memorialized in a log.
Findings

Across classrooms, teaching strategies inconsistently provide scaffolds and multiple entry points into the curricula. Student work products and discussions reflect uneven levels of student thinking and participation.

Impact

Students are not consistently engaging in appropriately challenging tasks or demonstrating higher-order thinking skills in their work products, as the needs of some learners are not being met.

Supporting Evidence

- In an English Language Arts (ELA) class focused on emerging technology and literacy, the objective of the lesson centered on students’ abilities to articulate sophisticated claims and counterclaims embedded in texts using problem/solution and cause/effect text structures. Students watched a video on the future of artificial intelligence and then replied via Tweet, stating what they deemed to be the most significant claim raised in the video. Students used cell phones and tablets to share their responses with each other and to defend their claims based on the video. Students were grouped heterogeneously but most students worked independently. Although students were engaged and multiple entry points were provided, the level of rigor resulted in minimal written production and the depth of student discussion was superficial.

- In a social studies class with ELLs, students were to identify the duties and responsibilities that drove people's lives during the Middle Ages. Students worked at different stations, which included videos, text passages, and multiple-choice questions. Some students used graphic organizers and students with disabilities were provided with differentiated texts that included bolded words and varied reading levels. During the class, a student was asked, “What do you do once you’ve completed the graphic organizer?” and the student replied, “I don’t know.” Another student working at a different station was asked, “What do you do once you’ve finished your worksheet?”, and the student shrugged his shoulders. Although an effort was made to differentiate the lesson, some students were unclear about the task objectives and the role and support of the English as a New Language (ENL) teacher were not evident.

- A lesson on conceptual prototyping included the use of academic technical vocabulary such as mock-up, conceptual, and functional prototypes. A video highlighting the visual design concepts for a Microsoft mouse emphasized the importance of failing early in the design process so the designer knows what needs to be fixed. The teacher provided clear explanations of the rationale for each prototype, which led to students discussing form, fit, and function.
Additional Finding

<table>
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<tr>
<th>Quality Indicator:</th>
<th>1.1 Curriculum</th>
<th>Rating:</th>
<th>Proficient</th>
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Findings

The faculty ensures that curricula are aligned to the Common Core Learning Standards and content standards. Curricula and planned academic tasks consistently emphasize rigorous habits and higher-order skills across content areas and grades, including ELLs and students with disabilities.

Impact

School leaders and teachers make purposeful decisions to build coherence and promote college and career readiness for all students. The Common Core curricula are designed to be accessible to a variety of learners.

Supporting Evidence

- Reviewed lessons and unit plans included learning objectives, aligned Common Core Learning Standards, skills, vocabulary, and materials. For example, a unit on introduction to argumentative writing included the learning objective, “I will be able to rehearse for formal debates by doing a dress rehearsal and making the necessary adjustments.” The skills addressed included discussion, preparation, rehearsal, and feedback application. The vocabulary integrated into the plan highlighted argument, claim, reasons, evidence, counterclaim, and debate and the materials used in the unit were comprised of articles, an evidence chart, argumentative essays with peer feedback forms, and a checklist. Another example of content aligned curriculum included a unit on sketching and computer aided design (CAD) modeling for an introduction to engineering design class. Students were expected to create a CAD model of five unique parts to make an assembly using Autodesk Inventor software.

- The design and development of curricula are guided by the staff’s common instructional framework, with the understanding that curriculum drives instructional practice and supports student success, including ELLs and students with disabilities. An emphasis is placed on project-based learning. Throughout units and lessons, student learning objectives conclude with projects where they investigate and respond to an authentic, engaging and complex question, problem, or challenge. Students are then expected to make their work products public by explaining, displaying, and or presenting to an audience beyond their classroom. For instance, a unit on reverse engineering charged students with disassembling a mechanical or electrical product of their choice and creating a chart identifying all parts and measurements. Additionally, they were to create sketches or take detailed photographs of product parts and lastly, prepare a poster board using specific criteria that would be presented addressing the questions, “What did you learn about the product’s functionality?” and “How would you improve your product?”

- Teachers refer to a Webb’s Depth of Knowledge chart when planning instruction and assessment in an effort to push students’ thinking while also reflecting on the complex cognitive processes demanded by the task rather than its difficulty. Teachers also determine the need for differentiation by reflecting on content, process, or product. They group students by readiness levels, learning styles, interests, and Individualized Education Plan (IEP) objectives that may need to be addressed for their students with disabilities, who represent approximately 20 percent of the school’s population. A review of Integrated Co-Teaching (ICT) plans included the model or approach that would be used during the beginning, middle, or end of the lesson.
Additional Finding

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<th>Quality Indicator:</th>
<th>2.2 Assessment</th>
<th>Rating:</th>
<th>Developing</th>
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Findings

The school is developing their use of common assessments to measure student progress toward goals across grades and subject areas. Across classrooms, teachers’ assessment practices inconsistently reflect the use of ongoing checks for understanding and student self-assessment.

Impact

Assessment results are inconsistently used to adjust curricula and instruction. Teachers inconsistently make effective adjustments to meet students’ learning needs.

Supporting Evidence

- The school has moved from three marking periods to two and they are beginning to look at how to create assessments across content areas that are synchronized. In ELA and math, there are benchmark baseline assessments in all classes. Based on assessment results, teachers learned that students are struggling with reading comprehension as well as with stamina. The school’s data indicates that students have made the most progress in math from their incoming proficiency levels to their performance on the Algebra Regents exam.

- The department chairs are in the process of designing common curriculum aligned assessments that are customized to monitor student progress to graduation as well as needs for sub-group populations, ELLs and students with disabilities. Some teachers use exit slips to check for student understanding and monitor progress and some teachers use data driven classrooms for progress updates, which informs opportunities for curricula adjustments. However, this practice is not consistent across content areas.

- Although checks for understanding opportunities are included in most unit and lesson plan documents, implementation and respective instructional adjustment was not evident across classrooms and content areas. In an algebra class, the teacher asked students, “Why is it important to know that an exponential function is a one-to-one function?” The teacher randomly called upon students while asking them to explain and demonstrate their responses. Students also completed exit tickets and fluency sheets before leaving the class. In a science class, while students were self-assessing their work, some were unclear about how to improve upon their work to earn a higher grade and did not seek assistance from their classmates or teacher.

- In a Career Technical Education (CTE) class, the teacher asked questions throughout the lesson to gauge student’s understanding of the concept of designing in a three dimensional world. Students grasped the concept quickly. However, the teacher continued to ask questions on concepts that most of the students already understood and the progression of the lesson remained at the same pace while student engagement levels decreased.
Additional Finding

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<th>Quality Indicator:</th>
<th>3.4 High Expectations</th>
<th>Rating:</th>
<th>Proficient</th>
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Findings
School leaders consistently communicate high expectations to the entire staff. The faculty consistently communicates expectations that are connected to a path to college and career readiness.

Impact
The staff engages in professional learning that is connected to the Danielson *Framework for Teaching* and a system of accountability is in place. Teachers provide ongoing feedback to help families understand student progress toward college and career expectations.

Supporting Evidence

- School leaders value school culture and creating a safe space where students feel comfortable taking academic risks. The entire school community places a focus on creating an environment of respect and rapport as well as managing student behavior. A faculty member stated, “We’ve been very intentional about stressing the importance of classroom management and students being in class. We are all being held accountable – leadership, teachers, and students. The students feel that we are all on the same page now.”

- The principal sends memos to the staff aligned to the school-wide instructional focus, including developing a culture of independent and professional reading, peer intervisitations, and strengthening academic and behavior supports for student sub-groups. Professional learning sessions for the year have included culturally responsive teaching, project based learning, text dependent questions, and discussion techniques and strategies. The ELA and math teachers have participated in intervisitations to observe lessons that included kinesthetic strategies to increase student engagement.

- A workshop entitled “From middle school to high school…It’s a Mind Shift” was facilitated by the ninth grade guidance counselor and the parent coordinator for families to assist them in supporting their children's transition from middle school to high school. Some of the topics included credit accumulation, student independence and responsibility, the role of the parent, having multiple teachers, the importance of communication, socialization, and preparation for college. Parents strongly agree that the staff communicates with them about how to support their children and their academic progress. Parents also monitor their children’s progress using PupilPath, a student and parent portal, and state that most teachers are current with their entries. However, parents shared that some teachers enter their assignments and grades after their child has already fallen behind.

- A parent commented, “The school is going through transition. There are two major transitions happening in the school — leadership and moving from a five year to a six year school and this is hard work.” Parents agree that the curriculum is preparing students for post-secondary success and they appreciate how the school is preparing both students and their families. Another parent shared, “I like receiving the syllabus for every subject at the beginning of the year. It helps me to stay on top of my son and make sure he is doing what’s required.”
### Findings

The majority of teachers are engaged in structured, inquiry-based professional collaborations that promote the achievement of school goals and the implementation of the Common Core Learning Standards. Distributed leadership structures are in place so that teachers have built leadership capacity.

### Impact

The instructional capacity of teachers is strengthening. Teachers have a voice in key decisions that affect student learning across the school.

### Supporting Evidence

- A review of ELA teacher team minutes illustrated an overarching goal of developing a viable, culturally relevant, rigorous curriculum that is accessible to all students. They also included findings, concepts learned, and action steps. During a team meeting, teachers reviewed student work to determine instructional foci for upcoming units based on students’ areas of challenge. Teachers noticed students struggled with synthesizing information, analyzing evidence, and identifying parts of an argument, specifically counterclaims and rebuttals. A recommendation was made to review test data for ELLs who seemed to be struggling most and to determine their performance levels at the end of the previous school year.

- Most teams use a protocol for looking at student work to guide their inquiry. However, during a team meeting, while teachers did collaborate, they did not engage in inquiry work. They were focused on problem statements, grouping statements according to theories, and a sorting activity that was not based on student work and analysis of relevant performance data but rather centered more on teacher opinion. Although the agenda included that they should come to every meeting with data and identify next steps and strategies, these practices were not evident during the observed meeting.

- Teachers stated that their instructional practice is becoming stronger and they attribute this to their team meetings and the collaborative culture of the school. Some teachers intervisit peers with whom they record each other’s instructional practices and discuss their findings. “This requires a level of vulnerability and trust”, stated a teacher. Teachers also commented on the benefits of having a better understanding of how to group students, include more options for student choice and integrating more CTE and industry standards into their classes.

- The school has an instructional cabinet team that meets weekly and brings ideas based on teacher feedback from their respective departments. For example, math teachers presented a proposal for an afterschool geometry enrichment course that was approved to provide students with targeted instruction in skills that have not been mastered based on data analysis. By the end of the marking period, students are expected to show improvement in the number of targeted skills they have mastered. This enrichment course is repeated for each geometry unit throughout the year.