



**Department of
Education**
Carmen Fariña, Chancellor

Office of School Quality
Division of Teaching and Learning

Quality Review Report

2014-2015

Academy for Software Engineering

02M546

**40 Irving Place
New York
NY 10003**

Principal: Seung Yu

**Date of review: December 9, 2014
Lead Reviewer: Mark Ossenheimer**

The School Context

The Academy for Software Engineering is a high school with 344 students from grade 9 through grade 11. The school population comprises 29% Black, 46% Hispanic, 9% White, and 10% Asian students. The student body includes 2% English language learners and 25% special education students. Boys account for 79% of the students enrolled and girls account for 21%. The average attendance rate for the school year 2013-2014 was 92.4%.

School Quality Criteria

Instructional Core		
<i>To what extent does the school...</i>	Area of:	Rating:
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	Additional Findings	Proficient
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	Focus	Proficient
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	Additional Findings	Proficient
School Culture		
<i>To what extent does the school...</i>	Area of:	Rating:
3.4 Establish a culture for learning that communicates high expectations to staff, students, and families, and provide supports to achieve those expectations	Additional Findings	Proficient
Systems for Improvement		
<i>To what extent does the school...</i>	Area of:	Rating:
4.2 Engage in structured professional collaborations on teams using an inquiry approach that promotes shared leadership and focuses on improved student learning	Celebration	Proficient

Area of Celebration

Quality Indicator:	4.2 Teacher teams and leadership development	Rating:	Proficient
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Findings

Teachers are engaged in structured inquiry based professional collaborations that promote the school goals of mastery-based learning and engaging instruction. Effective distributed leadership structures are in place.

Impact

Professional collaborations result in the implementation of Common Core Learning Standards (CCLS) and the necessary instructional shifts strengthening the instructional capacity of teachers. Shared leadership practices have built leadership skills of teachers and provided them a voice in key decisions that affect student learning.

Supporting Evidence

- Teachers participate in multiple team professional collaborations that include department, grade level, peer group based on years of experience, and student advisory.
- Observed peer group team meeting used a 'Student Work Analysis' template that was a shared Google.doc so that every teacher could see and input comments directly into the template during the meeting. The presented work centered on the Common Core Learning Standard of claim and counter-claim within argumentative writing.
- All teachers spoke to increasing their instructional capacity as a result of the professional collaborations in which they regularly engage. For example, an algebra teacher referred to working with a computer science teacher to understand coding and developed a math game called "Dragon Box" based on coding principles that taught students problem solving algebraic equations. During the student meeting, an algebra student referenced the "Dragon Box" game and could explain the coding and equation solving alignment and the resulting increased engagement for him and his peers.
- The school has built a Master and Model Teacher structure that has developed the leadership capacity of highly effective teachers who provide feedback to individual teachers and departments for both planning and instruction, as well as participate fully with the administrative team in a weekly meeting.
- The use of shared Google Forms for all curricula and planning work within the school creates transparency and shared responsibility among the entire staff. All planning documents are public, accessible, and demonstrate decisions and follow-through on key decisions at the department, grade, and advisory program levels.

Area of Focus

Quality Indicator:

1.2 Pedagogy

Rating:

Proficient

Findings

Across classrooms, teaching practices are aligned to the curricula, and the school's articulated set of beliefs about how students learn best is informed by the Danielson Framework for Teaching. Teaching strategies consistently provide multiple entry points into the curricula.

Impact

The school's alignment of pedagogy to the curricula and the engagement of all students in challenging tasks are not yet evident across the vast majority of classrooms.

Supporting Evidence

- The school believes that “rigor is reflected when learning is an active process” and students are active participants in the gathering of information, making meaning, higher order thinking questioning, and problem-solving. This was observed clearly in two Computer Science classes. A programming in a Java class had students actively engaged in an industry protocol of ‘code review’ in which colleagues review code collaboratively to emerge potential fail points. An Applied Computer Science class had students designing 3D models of phone cradles in multiple iterations using 123D Design that would be produced by 3D printers. However, in a tenth grade Global History class, students were to “quietly listen” for the 25 minute mini-lesson and take notes during a five to six minute video lecture. Most students were only able to capture one or two sentences in their notes because of the speed of the speaker in the video.
- Multiple entry points were observed in a ninth grade Algebra class through three differentiated practice problem sets at the “mild, medium, and spicy” levels that allowed students at various stages of understanding to engage in equations using the distributive property. A ninth grade Theater class provided entry points through student choice in identifying a point in the novel *Absolute True Diary of a Part-time Indian*, read in English language arts, in developing a scene writing proposal and turning it into a performance.
- Students engaged in appropriately challenging tasks in an eleventh grade American Literature class. By dividing of the class into two sections based on a claim/counter-claim writing assessment students were able to work on strengthening skill gaps, culminating in a debate on the topic of genetic engineering.
- Teachers plan and ask questions during lessons that are scaffolded up Webb's Depth of Knowledge framework, however the predominate pattern of discussions across classrooms was teacher-student and not student-student.

Additional Findings

Quality Indicator:	1.1 Curriculum	Rating:	Proficient
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Findings

School leaders and faculty ensure that curricula are aligned to CCLS and college and career standards through mastery-standards planning and referencing the Career and Technology Education (CTE) program. The curricula and academic tasks are refined using student work and data.

Impact

The school's purposeful decisions build curricula coherence promoting college and career readiness, as well as create accessibility and engagement for a variety of learners.

Supporting Evidence

- The school is implementing a mastery-based learning approach that is captured in curricula documents demonstrating that teachers identify master content and master skill standards across subjects. For example, an Earth Science unit map not only included and embedded Common Core Learning Standards, but also content identified as mastery for Earth Science, such as “Dew Point/Relative Humidity: Probability of precipitation increases as difference between air temperature and dew point decreases,” and a mastery skill of “Identify the variables in question when interpreting a graph as well as information represented by the graph.”
- The school has completed a comprehensive review towards New York State certification for the computer science/software engineering CTE program, ensuring alignment with State and industry standards.
- Curricula and academic tasks that are planned utilizing Webb's Depth of Knowledge (DOK) are evident in lesson plans. Teachers across subjects identify DOK questions based on level throughout the flow of a lesson and design tasks that ensure higher-level questioning.
- The school has seven special education teachers who co-plan with teachers across all subjects in order to differentiate units and tasks to create greater access for students with disabilities. For example, the special education teacher in the science department creates an Individualized Education Plan (IEP) snapshot that general education teachers use in planning for the needs of this subgroup of students.
- The observed Peer Team, teachers with more than three years of experience, reviewed a writing task from an English language arts class using student work to revise the task and create necessary supports for the student presented. The agendas and minutes are posted online within Google Docs and demonstrate a consistent pattern of teachers and teacher teams using student work to refine tasks.

Findings

Across classrooms, teachers use assessments and rubrics aligned to the curricula. The school uses results from common assessments to determine student progress and adjust curriculum and instruction.

Impact

Assessment practices provide actionable feedback to students and teachers regarding academic achievement. The adjustments to curricula and instruction take place at both the team and classroom level.

Supporting Evidence

- In the shift to mastery-based learning, the school has structured each unit with common baseline, formative, and summative assessments, aligned to the mastery skills and content.
- An item analysis of the Chemistry Regents Exam led to the decision to alter the math requirements for students taking Chemistry and the development of additional math prerequisite courses to prepare students for Regents-level Chemistry.
- After the school reviewed scholarship reports and CTE assessments, new computer science courses were developed in order to provide a greater array of varied level computer science courses. For example, an Applied Computer Science course was developed by a math teacher to provide an alternative to coding as well as give students an opportunity to develop math skills through projects.
- An English language arts team has created curricula with embedded assessment measuring spiraling skills across grades. For example, the standard of using text as evidence in support of a claim is spiraled from ninth to eleventh grade with corresponding appropriately leveled assessments and rubrics.
- Reviewed student work across grades contained clear next learning steps on rubrics that aligned to the schools grading policy of four levels of achievement “Novice, Apprentice, Practitioner, Professional.”

Quality Indicator:	3.4 High Expectations	Rating:	Proficient
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Findings

School leaders, teachers, and staff, consistently communicate expectations that are connected to a path to college and career readiness for all students and offer ongoing feedback to help families understand student progress.

Impact

The culture of learning offers feedback and academic as well as guidance supports to ensure students are prepared for the next level.

Supporting Evidence

- The school has an established Career and Technical Education program in computer science with advisors from several major companies and organizations that ensure program expectations meet New York State and software engineering industry standards.
- Every student at AFSE takes a four-year series of courses in computer science so they are fully immersed in relevant coursework and gain exposure to industry principles and experiences.
- Families have access to student progress through the online grading platform, email teachers frequently, and receive bi-weekly phone calls from advisors. Families also attend and participate in computer science career awareness events in order to understand industry expectations and support their children.
- Students have advisory with a small group of students. Advisors are a guidance support who meet with students, are the main parent/family contact, coordinate interventions, and set/monitor goals with students. Students stated they have short- and long-term goals in advisory that encompass both academics such as increase a grade in a class, guidance goals such as course selection, and social-emotional goals such as becoming a better self-advocate with teachers.