

Accelerating HQIM Success with Project CAFE: AI-Enabled Reflection and Coaching

In Partnership with Urban Assembly



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Introduction

The growing base of research and practice wisdom on the power of high-quality curriculum and instructional materials (HQIM) all point in the same direction: effective use of HQIM can improve teacher practice and accelerate student learning.¹ At the same time, effective use of HQIM (via effective implementation) is a multi-step, deeply intentional, and complex process that requires thoughtful planning.

The field has broadly acknowledged that a structured and thoughtfully monitored implementation process is necessary. However, in practice, plans for well-designed professional learning for HQIM rollout that goes beyond the “bundled” professional learning offered by curriculum providers, are rarely developed or, if they are, are not effectively implemented. Thus, in far too many districts and schools, HQIM roll-out is truncated, haphazard, and full of gaps.

¹ Importance of high-quality instructional materials. Oregon Department of Education. (2023). <https://www.oregon.gov/ode/educator-resources/teachingcontent/instructional-materials/Documents/InstructionalMaterialsToolkit/Importance%20of%20High-Quality%20Instructional%20Materials.pdf>

Findings from two RAND American Educator Panel surveys indicate that introductory professional learning typically provided by curriculum providers supported “teachers to master the basics of their newly adopted curricula — such as navigating materials and understanding lesson structure — but was often insufficient for deeper instructional improvement.” To address this, numerous organizations provide guidance, such as Rivet Education’s Framework for Curriculum-Based Professional Learning for comprehensive professional learning design.

At New Teacher Center (NTC), we help districts deeply understand and master HQIM implementation. Our Optimal Learning Environment framework (OLE) articulates the instructional conditions necessary for HQIM to make a difference in classrooms. These practices are deeply grounded in the science of learning and development research and provide clarity on the attributes of instruction that drive student engagement through focus on relationships, student assets, and access to rigorous and authentic learning. The goal is to go beyond the basics and keep HQIM professional learning focused on the high-leverage instructional practices.

In reality, however, the challenge for leaders tasked to design effective HQIM roll-out plans is to deliver the needed depth and quality of ongoing, job embedded teacher support without cutting corners. As professional learning and staffing resources are squeezed, this means utilizing tools and strategies to reach the most teachers with the highest quality support that combines the “what” and the “how” of excellent and equitable teaching practice.

We have been excited by the possibility posed by Urban Assembly’s AI-powered Classroom Automated Feedback Environment, or Project CAFE, a tool that can empower HQIM-focused coaching conversations – where teachers can receive high-quality, standards-aligned data analysis and feedback loops in near real-time, significantly decreasing time spent on manual data collection and increasing time that teachers, coaches and leaders can spend on rich coaching conversations. This AI-enabled solution, particularly when paired with a high-quality coaching model like NTC’s, poses a critical question to the field – **how can AI supercharge coaching and reflection on instruction, accelerating the rate at which teachers effectively implement HQIM?**

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Keys to HQIM Implementation

Districts engaged in well-planned HQIM implementation move through phases of implementation. To become better acquainted with the materials, especially at the beginning, and also to refine practice with continued implementation, teachers need frequent and precise feedback in their use of new materials and strategies and opportunities for reflection.

Classroom observations, whether conducted by school leaders, instructional leadership team members, coaches, or teacher teams, are time intensive. Sifting through evidence and data after the observation to organize feedback adds additional time and effort.

Though the implementation of each set of HQIM is unique, observers would be looking for evidence of effective implementation of HQIM in classrooms that includes:

- Demonstration that both teacher- and student-facing curricular materials are in use
- Scaffolds and supports that enable students to access grade-level instruction
- Amount of time students are actively engaging in content through discussion
- Amount of time students are engaged in authentic reading, writing, and mathematics work and meaningful tasks
- Significant use of academic vocabulary by both adults and students
- Explicit learning connections made within and across lessons

Project CAFE is designed to provide easy-to-use indicators and evidence of what is happening in classrooms in these areas. The endgame for observing HQIM implementation in practice isn't to check a box that says "I saw the curriculum being used in the room." The goal is to see how educators are grounding their instruction in HQIM, where they might need help or more opportunities to reflect and practice around the goal of transformative learning.



CAFE as a Supportive Tool for HQIM Implementation

The CAFE platform provides data analysis and visualization that offers a comprehensive view for teachers on their classroom instruction. When considering the extent to which HQIM is being utilized effectively, CAFE can offer critical insights on content focus, discourse, language, and interaction patterns that would be challenging to capture manually. The data are grouped into five domains based on the **CLASS** rubrics — Quality of Feedback, Positive Climate, Productivity, Behavior Management, and Learning Formats. These domains and metrics can directly support coaching conversations around HQIM implementation.

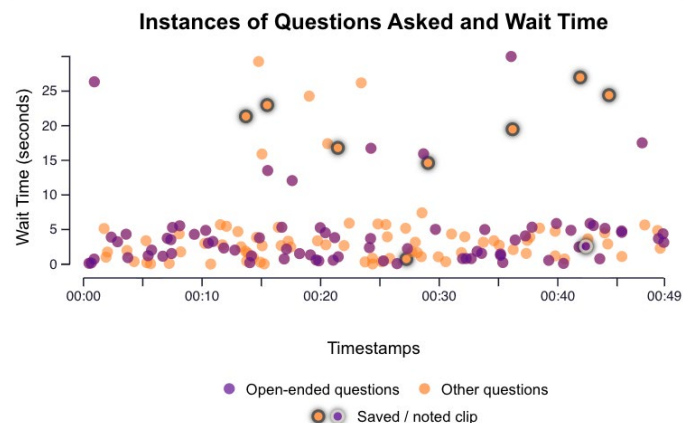
Quality of Feedback

Metrics:

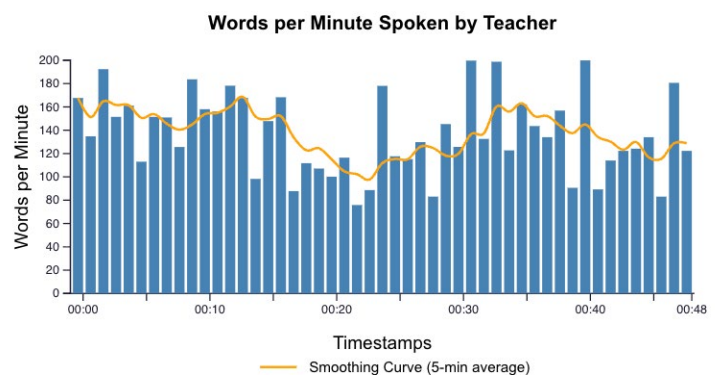
- Instances of Questions Asked and Wait Time
- Words per Minute Spoken by Teacher

Connection to HQIM:

Viewing and analyzing these metrics allows teachers and their coaches to understand the extent to which students are given meaningful opportunities to grapple with the content. Effective use of rigorous content means students have ample opportunity for productive struggle – and understanding the nature of the questions asked, wait time, and how well the rate of teacher speech supports the effectiveness of content delivery at different points in the lesson.



Note: Wait times 30 seconds or greater may indicate that a question was not answered.



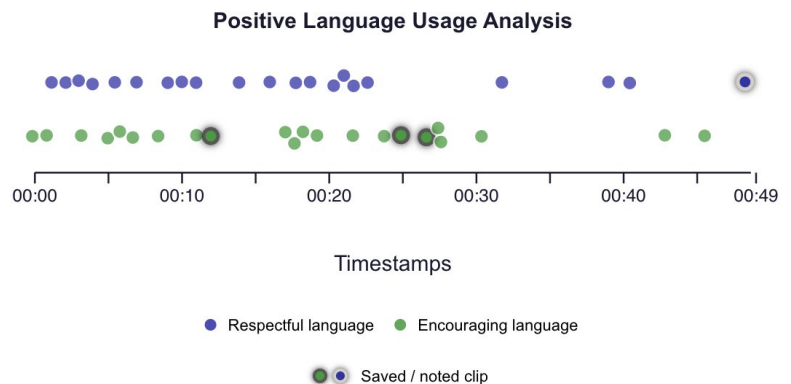
Positive Climate

Metrics:

- Positive Language Use Analysis (Respectful Language, Encouraging Language)

Connection to HQIM:

In order for students to meaningfully take on the cognitive lift necessary to engage in rigorous content, it is also necessary for students to be in a safe, supportive learning environment. Applause and positive language are indicators that students are engaging in an optimal learning environment – critical for learning to take place.



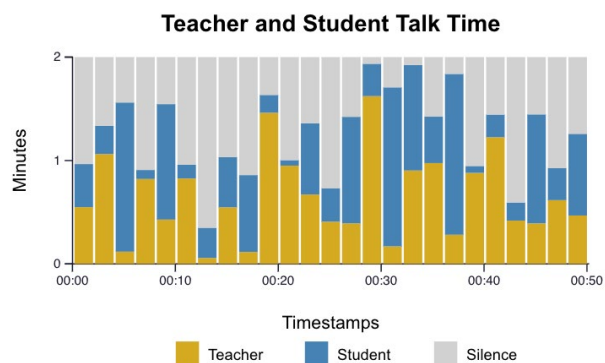
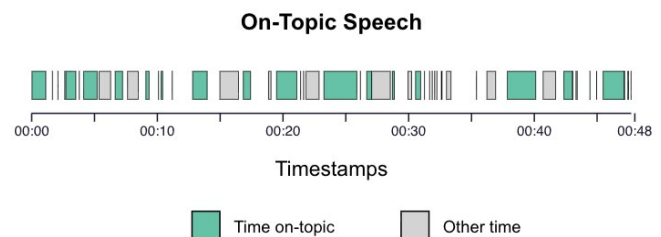
Productivity

Metrics:

- On-Topic Speech
- Teacher and Student Talk Time

Connection to HQIM:

These data points offer another picture into talk time, but more specifically, offers teachers and their coaches a measurable picture of classroom discourse. Understanding how discourse patterns vary over the class period, and around what topics, helps teachers understand trends on how students are grappling with the material.



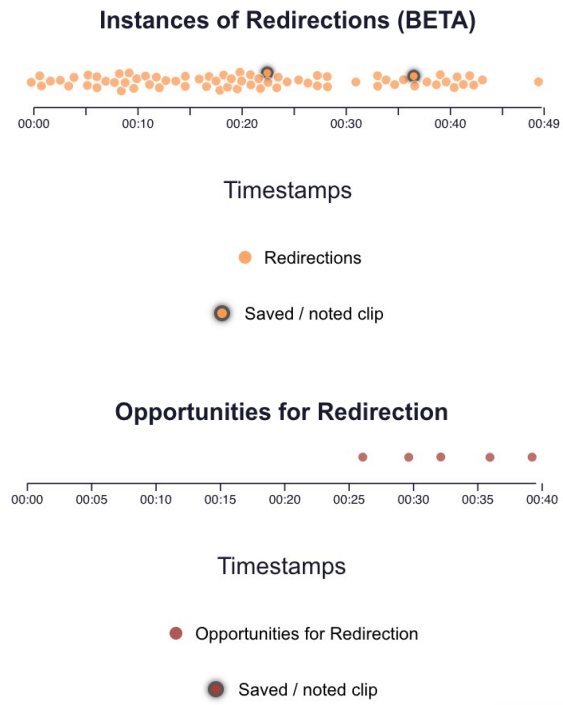
Behavior Management

Metrics:

- Instances of Redirections (in BETA)
- Opportunities for Redirection

Connection to HQIM:

This view allows teachers and their coaches to understand the extent to which students are remaining on task and engaged, and the ways in which teachers provide effective redirection, scaffolding, and differentiation so that every learner in the classroom can engage with the materials.



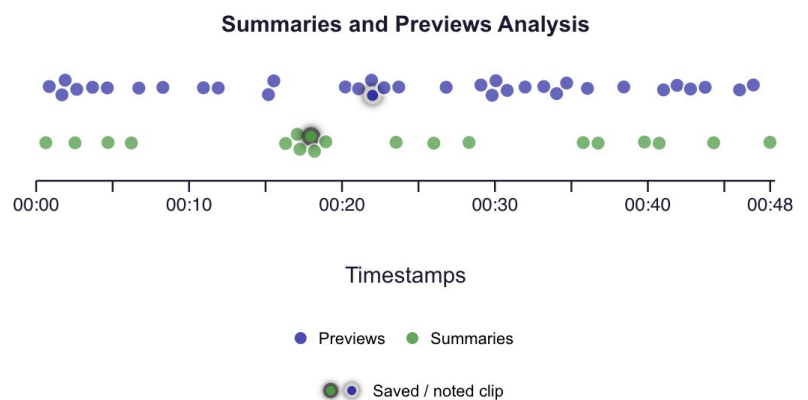
Learning Formats

Metrics:

- Summaries
- Previews Analysis

Connection to HQIM:

This view allows teachers to understand the extent to which they are summarizing for students what has been learned, and where the learning is going next. These instructional moves support students' ability to draw connections between what they have learned and what they will be learning next within the high-quality instructional materials.





Across all these domains, educators (teachers, coaches, leaders, PLC facilitators) can pull rich insights from the platform summary, domains, metrics, with review of the associated video clips and transcripts supporting deeper conversations. In particular, the transcripts for the Instances of Questions Asked and Wait Time, Previews, and Summaries provide the richest sources for reflection on HQIM implementation.

Among teachers who regularly use CAFE, ongoing data analysis through the platform indicates that instruction improves – specifically, student talk increases, framing becomes clearer, and teachers are more likely to surface and process student thinking in ways that foster student collaboration and engagement.

These findings are promising signals of the power that this comprehensive, ongoing information can provide to teachers to help them refine their practice toward an optimal learning environment.

CAFE In Action

Teachers or teachers working with coaches, mentors, or in PLCs can pull data and transcripts to use side-by-side with the HQIM lesson plans to understand classroom-level implementation. This kind of ongoing data can be incredibly beneficial when engaging in coaching conversations. A teacher and coach could use the platform transcript and video evidence to inspect the On Topic Speech metric to see if the teacher and students are using the provided text-specific questions or if they might be slightly changing them or “watering down” the content. They might also look at how many questions are actually about the text versus extend beyond the text. CAFE empowers teachers and their coaches to have regular, ongoing access to quantifiable metrics that lend themselves well to ongoing reflection and improvement.

One teacher used CAFE to support her instructional goals – “I set a goal to ask more higher-level thinking questions in my classroom, and I used CAFE’s metrics to track how many of each type of question I was asking in a class period.” From her first observed lesson to a later session, open instructional questions did increase – from 19% to 36%. CAFE offered her additional insights, however, that pushed her to consider the ways in which she was utilizing those questions to engage her students. “Initially, the results were not what I expected. I was asking more questions, but the data showed I was actually doing *more* of the talking and thinking myself, as opposed to leaving space for my students to do so.” The teacher noted that she “began focusing not only on the number and quality of my questions, but also on how long I was allowing students to think before I stepped in.” This data was powerful for this teacher – it allowed her to see real-time results of instructional shifts, and what shifts needed to be made further, to get to the true shift in student engagement and intellectual lift she was aiming for. As a result, she reports “students are now more likely to build on each other’s ideas and engage in peer-to-peer questioning rather than relying on me to drive the discussion.”

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Maximizing the Potential

As a field, we know that adopting HQIM is not sufficient – we must attend to the ways in which HQIM is utilized in a positive learning environment that fosters meaningful student engagement with the materials. Project CAFE creates the space for educators to reflect on this specific question– in bite-size, easily accessible information that supports ongoing reflection and refinement to practice.

Looking ahead, we see immense potential for learnings that can inform the field broadly on what AI-enabled coaching can accomplish. Specifically, CAFE bears the promise of transforming an entire instructional ecosystem when paired with ongoing, human coaching opportunities, where teachers and the leaders that support them receive ongoing, rich data that can drive the highest leverage improvements. CAFE will explore opportunities to test the platform alongside in-person coaching models to understand the impact over time. As Project CAFE continues to build its database of teacher actions, Urban Assembly will also have invaluable learnings on the ways in which the dynamics of a classroom and instructional moves interact with one another – helping teachers and coaches understand, with precision, which instructional shifts most impact different dimensions of the classroom environment. Project CAFE will continue to demonstrate the best of what AI can offer to schools – a tool that empowers teachers and leaders to make data-driven choices that unlock rigorous learning for all students.



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