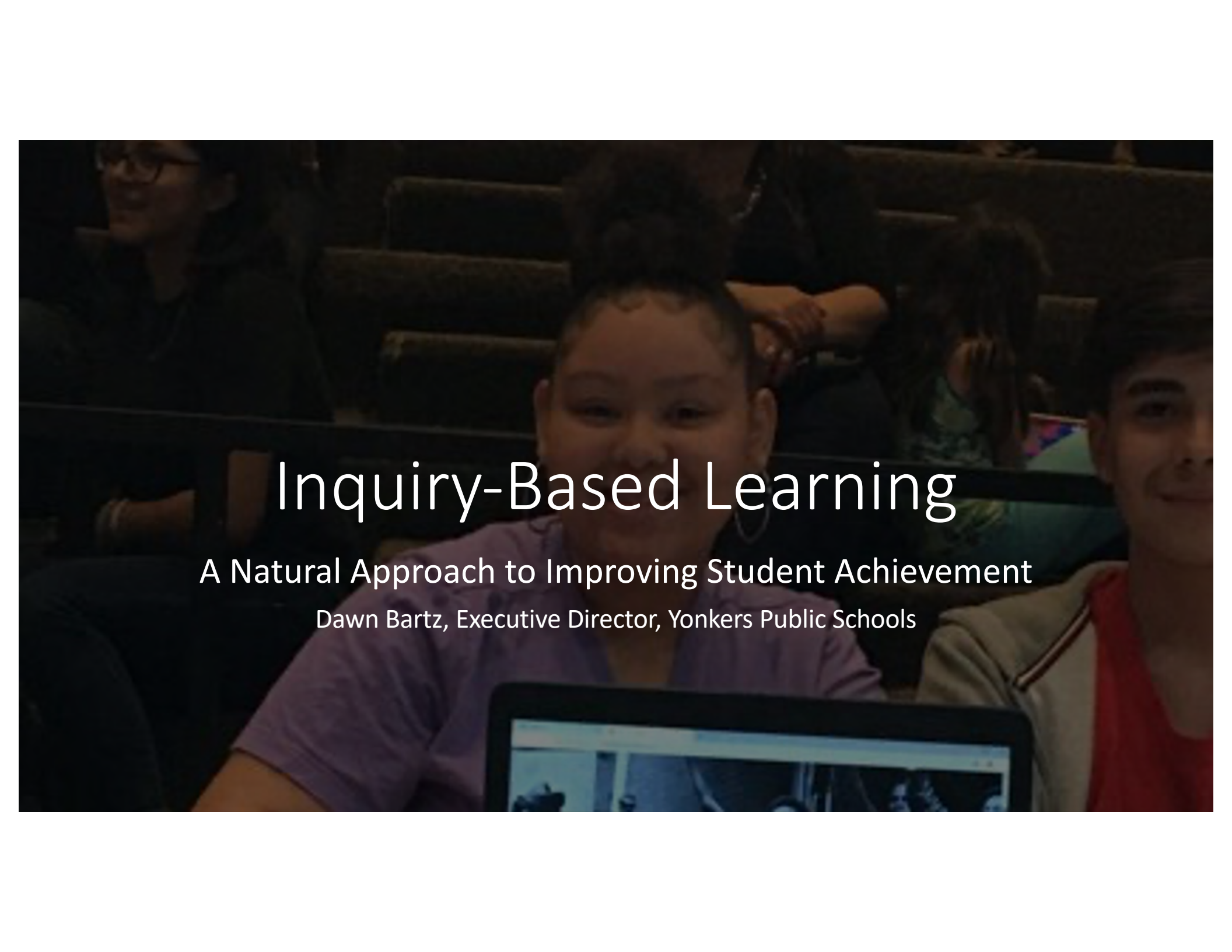


A photograph of a classroom scene. In the foreground, a young girl with dark hair in a bun, wearing a purple shirt, is looking at a laptop screen. To her right, a boy with dark hair, wearing a red shirt under a grey jacket, is also looking towards the camera. In the background, other students are visible, including a girl with glasses on the left. The text is overlaid on the center of the image.

Inquiry-Based Learning

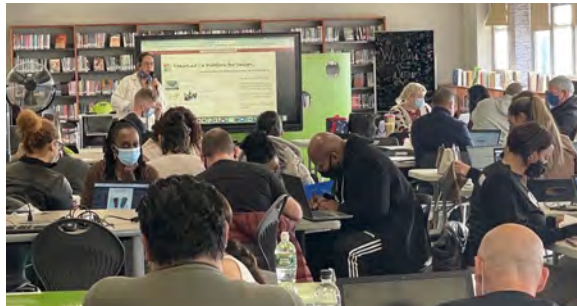
A Natural Approach to Improving Student Achievement

Dawn Bartz, Executive Director, Yonkers Public Schools



Inquiry-Based Learning series being held at Gorton High School and facilitated by Columbia University.

Bringing teachers from across the district together to create "transdisciplinary" units of instruction. This is a 5-year project.





How does inquiry increase
student achievement?

When we shift from traditional teacher-driven instruction to a more open-ended process that uses "inquiry, reflection, negotiating meaning, case and problem-based learning, discussion and collaboration, and self-directed learning" students achieve at much greater rates (Roessign & Chambers, 2011).

Phases of inquiry-based learning/project-based learning

- The inquiry process begins with a Driving Question or Compelling Problem that is rooted in "Real World" issues and in which there is no one "right" answer or solution.
- Students collaborate, research, question, conduct investigations/experiments to find a "solution"
- They gather, interpret and use evidence/sources
- Construct and test potential solutions/hypotheses
- Create a project to present to the community
- Receive feedback from community (both large and small)
- Student reflection on the process and product
- Inquiry is characterized by students being the *drivers* of their learning and teacher guiding, providing content and skill development. Technology facilitates the process.



"Inquiry acts as a magnet for content," John Dewey



As a building leader, what can you do to support inquiry learning in your schools?



What do you need to support teachers in creating inquiry-based classrooms?



What is the connection between inquiry and achievement?

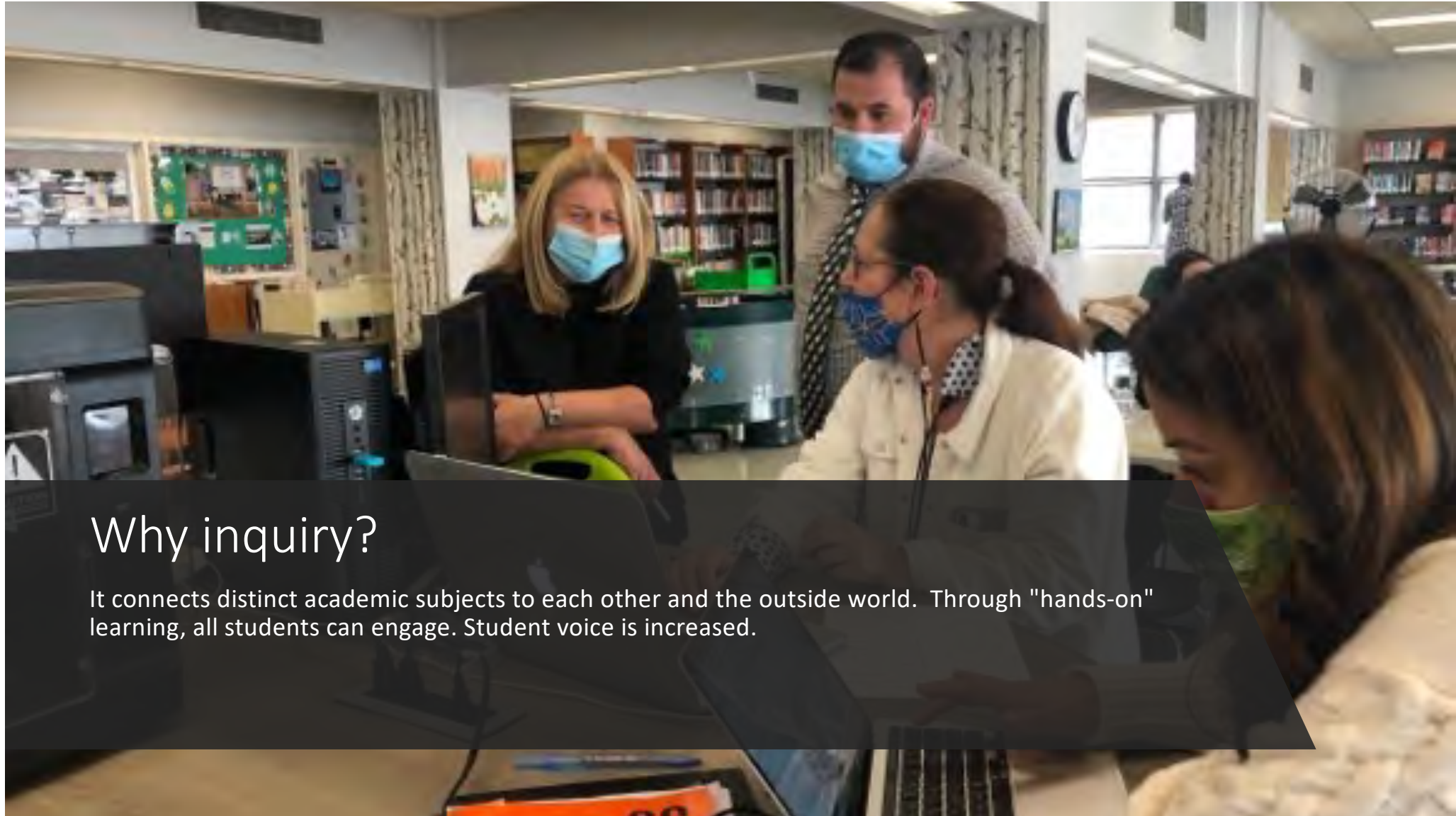
Students become the "drivers of their education"

- Classrooms that have high levels of student autonomy and where students are encouraged to express themselves tend to have "higher levels of student mastery of content, higher engagement levels, and better learning outcomes"

(Blumenfeld et al, 1991; Lawson & Lawson, 2011; Scheer et al, 2012)

- Through solving these authentic, complex problems or answering a driving question, students become motivated to learn more leading to increased academic engagement and increased learning outcomes.

(Dewey, 1930; Kilpatrick, 1921; Blumenthal et al, 1991; Hernandez-Ramos & De La Paz, 2009).



Why inquiry?

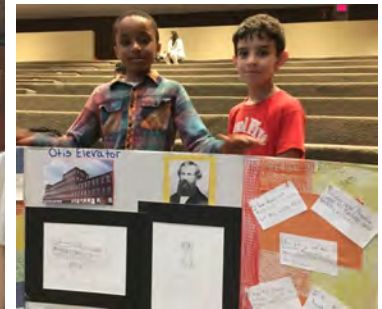
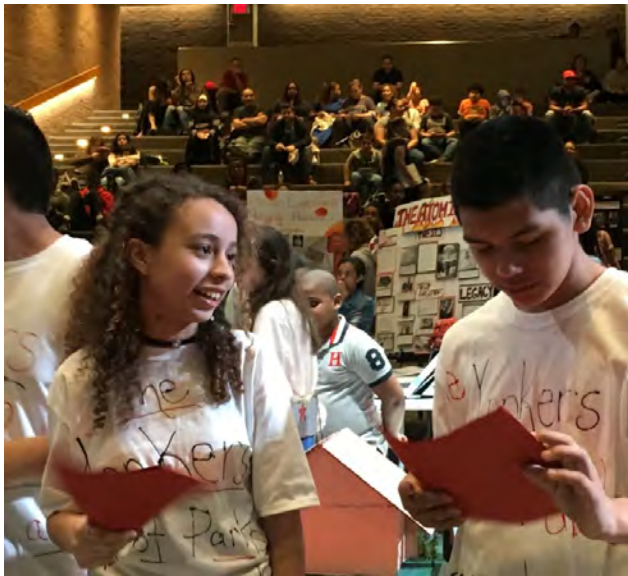
It connects distinct academic subjects to each other and the outside world. Through "hands-on" learning, all students can engage. Student voice is increased.



Fourth-grader Khalil Tolliver-Van Wright reads his comment on "courage and community."

What does it look like? What does it sound like?

What does it feel like? Pride

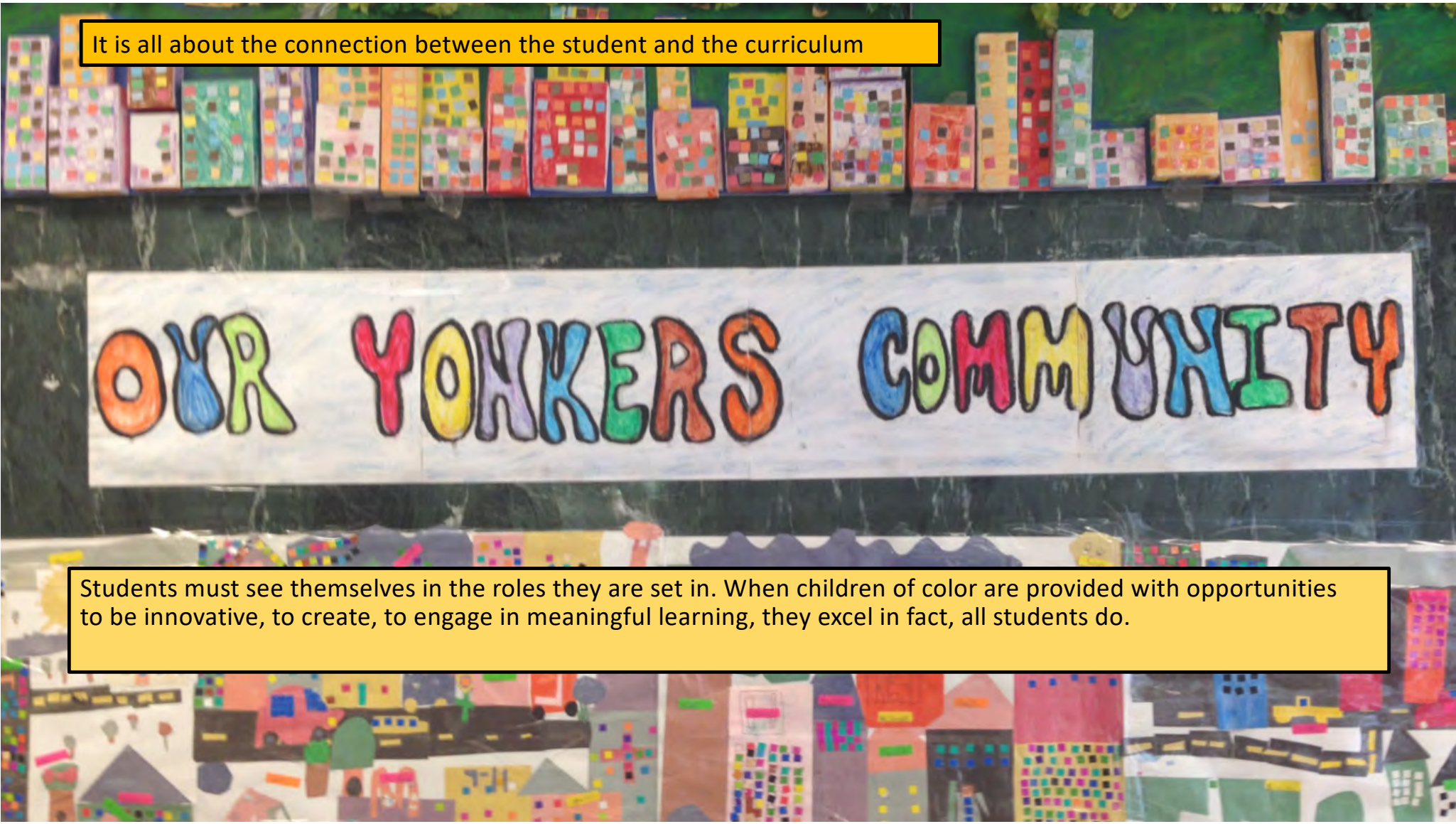


Connection between inquiry & culturally responsive instruction

- The collaborative nature of inquiry-based approaches leads all students, regardless of race or socioeconomic status, to higher levels of motivation towards their academic work.
- By bringing the community and culture into the classroom through a problem-solving framework we build upon a "fund of knowledge" in which our students are chief participants.

(Moll & Gonzalez, 1994).



A chalkboard with a colorful border of paper houses and a central banner reading "OUR YONKERS COMMUNITY". The banner is white with the words in large, colorful, block letters. The border consists of many small, colorful paper houses and buildings, some with windows and doors, arranged in a row. The background is a dark green chalkboard.

It is all about the connection between the student and the curriculum

Students must see themselves in the roles they are set in. When children of color are provided with opportunities to be innovative, to create, to engage in meaningful learning, they excel in fact, all students do.



Equity and Inclusion

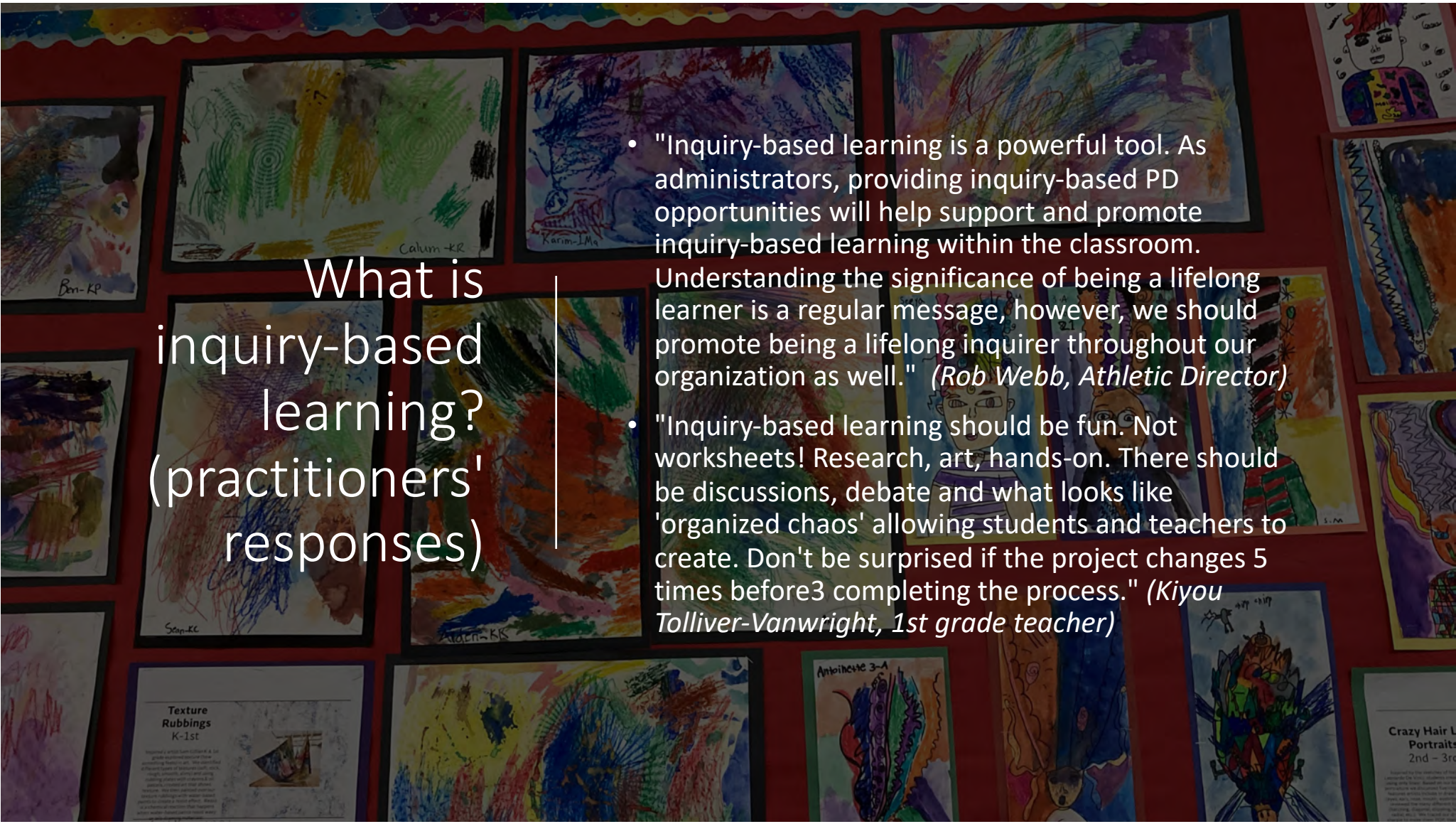
- Authentic, experiential learning opportunities promotes depth of learning and increase retention.
- Professional learning for teachers on inquiry-based methods of instruction, ways to differentiate for diverse learners, and instructional technology training are necessary to build competencies and confidence.



Collaboration

For interdisciplinary or transdisciplinary inquiry units to be created, practitioners must have the time to collaborate and to plan. Planning occurs through the backwards design process. Once the inquiry is launched, the teacher can shift to the roles of guide and facilitator.

Transdisciplinary: adding technology as a major driver to interdisciplinary learning.



What is inquiry-based learning? (practitioners' responses)

- "Inquiry-based learning is a powerful tool. As administrators, providing inquiry-based PD opportunities will help support and promote inquiry-based learning within the classroom. Understanding the significance of being a lifelong learner is a regular message, however, we should promote being a lifelong inquirer throughout our organization as well." *(Rob Webb, Athletic Director)*
- "Inquiry-based learning should be fun. Not worksheets! Research, art, hands-on. There should be discussions, debate and what looks like 'organized chaos' allowing students and teachers to create. Don't be surprised if the project changes 5 times before3 completing the process." *(Kiyou Tolliver-Vanwright, 1st grade teacher)*

Final note on the value of inquiry

Through solving authentic, complex problems students become more motivated because they can see the connection between the classroom and the outside world, often leading to increased learning outcomes (Dewey, 1933; Kilpatrick, 1921; Blumenfeld et al, 1991).

"...students need opportunities to construct knowledge by solving real problems through asking and refining questions, designing and conducting investigations, gathering, analyzing, and interpreting information and data, drawing conclusions and reporting findings" (Blumenfeld, et al 2000).

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