

Project-Based Learning: 7 Ways to Make It Work

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There are challenges and pitfalls to implementing project-based learning, but the advantages are great. Here's one school's journey.

It's a balmy Tuesday morning, and a group of high school physics students is taking advantage of the weather to work on building pasta bridges outside. Inside the classroom, another group is receiving feedback about the form and durability of their design from a local architect, who notes that their construction mirrors the architecture of San Francisco's iconic Golden Gate Bridge.

Along one wall of the classroom, students are critiquing their classmates' designs and offering suggestions to further stabilize their bridges.

When asked the purpose of this project, student Hector Lopez responds, "We're investigating the question, 'How can we use forces and engineering design thinking to construct a pasta bridge that has the highest weight-to-support ratio possible while still being aesthetically pleasing and staying within budget?'"

Hector is most intrigued by the aesthetic design element. "What I've enjoyed most about this project," he notes, "is the ability to choose how we want the bridge to look so we can put our own style into the final product."

In another area of the campus, students in Victoria Barragan's English language class are working together to create their own BuzzFeed-style video replicating the culture they most closely identify with. (For examples, see [Ms. Barragan's website](#).) As they wander through the school hallways stopping to film one another on an iPad, these students are learning about themselves and the concept of multiculturalism. As the students act out scenes, they enlist the campus supervisors, asking them to hold the iPad in between takes and trouble shoot iMovie usage.

"Our goal is to explain what it means to be a part of our culture," explains student Mikayla Chavez. "We want to show others what it's like to grow up in a Mexican household and demonstrate behaviors we can all relate to." Ms. Barragan's eyes light up when asked about the success of her project:

It's scary to try something new, and I'm always worried it won't work. But when I see students engaging with materials, with one another, and with concepts, I see that, regardless of how smoothly things run, students are benefiting in a major way.

Scenes like these are becoming more common at Abraham Lincoln High School in San José, California, where about 70 percent of the student population are of Hispanic origin, about 14 percent are English language learners, and more than 60 percent are considered socioeconomically disadvantaged.

The common thread woven into this type of instruction, known as project-based learning (PBL), is the teachers' choice to relinquish a majority of learning into the hands of their students, allowing students to be active partners as opposed to passive receptacles. This encourages deeper exploratory learning and helps students make connections beyond the school's walls.

Change—It's Hard!

As with any change effort, transitioning to student-centered learning may create a sense of anxiety and hesitation for teachers. Individual teachers may readily acknowledge the need to adapt their instructional methods to more

closely align with 21st century expectations. But motivating an entire high school staff to change its pedagogy is a far more complicated proposition.

Changing habits of mind is difficult, even for the most ardent adult (Costa & Kallick, 2000). Changing habits of culture poses even greater challenges. Being an agent of cultural change means being aware of the subtle shared values of knowledge, customs, and habits; changing that culture requires having a moral purpose, building strong relationships, sharing knowledge, and knowing how and when to move from chaos to coherence. A resilient vision infused with energy, enthusiasm, and hopefulness is crucial to leading a culture of change (Fullan, 2001).

Both the Common Core State Standards and 21st century learning focus on the skills students need to be successful in today's world. In light of those criteria, the objective of California's San José Unified School District is to produce students who can (1) think critically and problem solve, (2) think creatively, (3) communicate effectively, (4) collaborate, and (5) evolve into global citizens. Project-based learning offers students practice experiencing these skills in a safe environment.

For change to occur, everyone needs to be involved. Administrators can communicate clearly and consistently with their staff. Teachers can reflect on their strengths and reevaluate their approaches in light of best practices. Students can self-advocate, requiring that educators help prepare them for their digital futures with both vigor and purpose. Parents can offer students additional support. Although all these voices are crucial for success, the biggest challenge lies with teachers and their ability to change their instructional practices (Wagner, 2001).

The Ups and Downs of Implementation

During the 2012–13 school year, a cohort of administrators and teachers at Abraham Lincoln High School rallied behind the concept of project-based learning and inspired a spirit of change. The cohort championing project-based learning, called the *redesign team*, observed schools that had adopted the approach and noted that interdisciplinary instruction appealed to a greater diversity of learners through its student-centered approach. Biology teacher Catherine Handschuh reflected, "Projects enable students to think critically and be creative while working with their peers in a safe and positive environment. I wish I'd been using this approach all along!"

The redesign team was enthusiastic about the possibilities of improved student achievement. An infectious wave of emotion swept across the staff following the school's two-year partnership with the [Buck Institute for Education](#), a nonprofit that focuses on training educators in PBL techniques and strategies. Teachers from social science, English, and biology courses were chosen to pilot and produce interdisciplinary projects. The teachers demonstrated to staff members how the various disciplines could be woven together to give students a more authentic connection to the content they were learning. The teachers also created a small professional learning community for those who had students in common.

For one PBL unit, teachers charged students with answering the question, "How do genes, society, and the arts influence our perception of what's beautiful?" Students looked at the issue through various lenses—from a genetic, biological perspective as well as from a cultural, geographical perspective—and discussed their findings in writing. Students concluded that where one lives determines how one will be seen, in terms of both physical appearance and sexuality; cultural perspectives highly influence the concept of beauty. With assistance from media arts teacher Daniel Resz, the teachers created a video documentary highlighting their students' projects and shared it with faculty members. This inspired many teachers to incorporate student-designed projects in their own units.

Toward the end of the 2013–14 school year, excitement surrounding PBL started to dissipate in the wake of final exams, district benchmark testing, explicit direct instruction deadlines, and teacher overload. However, the redesign team knew an implementation dip frequently surfaces when cultural change hits a roadblock and teachers' zest wanes (Fullan, 2001).

A cadre of teachers banded together to stoke the flames of the smoldering fire. I was one of them. With support from the site administrator, along with my colleague Kelli Berryhill, we split our time during the day between teaching and working as PBL coordinators.

The goal of the first year was to establish a structural foundation that included a bank of projects, access to resources and technology, emotional support, and release days for PBL planning time so that teachers who wanted to create a project would have the needed tools. Nevertheless, a dark cloud of resistance from the teaching staff loomed overhead. It became clear that the emotion of excitement isn't stable or sustainable enough to maintain long-term change (Yongmei & Perrewé, 2005).

Our 2015 Back to School Night illustrates some of the hesitation that teachers were experiencing. Initially, we had asked teachers to modify their traditional Back to School Night from a stand-and-deliver, question-and-answer session to an open house presentation, where student work would be on display for parents. A number of teachers balked at the change. Yet more than 40 percent of teachers attempted this model and found support from parents, creating greater interest in project-based learning. In addition, through a survey we conducted, we learned that teachers' major complaint with PBL was lack of communication between administration and staff. As a result, administrators began to more clearly and consistently share their expectations about PBL and founded the monthly *PBL Newsletter*.

As a result of our efforts, the 2016 spring semester witnessed a renewed schoolwide vision for continuing with project-based learning. By soliciting and listening to teacher concerns—and creating a plan that addressed those concerns—we've enabled PBL practices to gain a stronger foothold at the school. Now more teachers are willingly implementing the gold standard tenets from the Buck Institute for Education.

Seven Lessons Learned

Project-based learning at Abraham Lincoln High School might have become stuck in a quagmire, had we not addressed several roadblocks. Here's what we learned about changing a culture of learning (see also Elmore, 2004).

- 1. Ensure clear and consistent communication from administrators.* The administrative team had a relatively high turnover rate during the three years that project-based learning was implemented, and the messages from the administration to teachers changed each year. Because the assistant principals rotated year after year and often lacked background in the new approach, teachers began to focus less on PBL initiatives and more on their traditional methods to meet district benchmarks and state mandates.
- 2. Strengthen district awareness and support.* The school district was on board with the PBL redesign but had little flexibility to exempt teachers from rigorous pacing calendars, leaving many teachers feeling as though they had to choose between project-based learning and external expectations. We would have experienced less teacher resistance if there had been consistent messaging and ongoing professional discourse among the district, administrators, and teachers. This would have created a safer environment for instructional and cultural change.
- 3. Manage misperceptions.* Misunderstandings began spreading about whether all teachers on campus were expected to implement PBL, and when. There was also a misperception that PBL would be implemented overnight, which alarmed some staff members. Early communication is key.
- 4. Start small and grow.* A small group of teachers at a given grade level who believe in project-based learning can clarify expectations about PBL and ensure that teachers have the time, space, and access to the technology they need to succeed with the approach. At Abraham Lincoln High School, a handful of 9th grade teachers has designed several interdisciplinary projects, creating a "school within a school," which will be implemented in fall 2016 and will then spread to 10th–12th grades. Watch the [promotional video](#) we created to recruit willing teachers.

5. *Use modeling to encourage others to step out of their comfort zones.* When teachers who haven't tried project-based learning witness the success and enthusiasm of students involved with the approach, they may be more inclined to try it. Teachers also must be willing to forego the comfort that comes with relying on tried-and-true lesson plans.

Our *PBL Newsletter* has helped in this regard. It features projects that teachers and students are completing, student perspectives on the project, and evidence of successful outcomes. Our focus on using media to share the benefits of project-based learning and on structurally developing PBL has encouraged teachers who had been on the fence to become advocates for the approach.

6. *Get teacher buy-in to showcase student work.* The idea of altering the format of our Back to School Night to showcase student work was originally approved by the administration without full teacher input. Teachers felt blindsided by a change that required students to complete a project for display. However, when they saw the positive feedback coming from classrooms in which teachers had showcased student work, many reaffirmed their decision to participate in PBL.

7. *Encourage communication and collaboration among teachers.* Teachers have varying reactions to their experiences—some positive, others tentative—and they know that the best source of information and support is often their colleagues. Providing time for teachers to talk about their successes and failures with project-based learning can create a community bond that reinforces the idea that they're not alone in their efforts and that they can measure progress in multiple ways—through student voice, through engaged interactions, and through their collaborative partnerships.

Next Steps

Keep in mind during any pilgrimage of change how indispensable patience and reflection can be. It's vital to collect data to document ongoing change and to ruminate on how well things are going and where they need tightening.

Any administration or group of teachers can effect change in a school—when they place their faith in an idea and maintain that faith. As Fullan (2006) stated, "The route to achieving such a critical mass is not to wait for it to happen but to be among those promoting its use, even if those around us seem disinterested or against it" (p. 38). Our experience at Abraham Lincoln High School suggests that the keys to overcoming resistance include a systematic approach that incorporates clear and consistent communication, modeling, realistic goal setting, and demonstrations of the value of the change. But perhaps the most important component of any attempt to change the status quo is keeping student success at the center.

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