



WPI

Webinar Series Key Takeaways

Reinventing Higher Education Through Project-Based Learning



Project-based learning (PBL) in higher education involves changing traditional academic roles that students and faculty may be used to, taking them out of their comfort zones in some cases. While such changes are not easy, PBL can result in greater student learning gains than traditional teaching in higher education.

PBL can bring value to institutions of all types—starting with single courses or programs and scaling to include a wide spectrum of course types and majors across an institution. The implementation of PBL is not uniform across institutions, however—it should be tailored to the academic goals, mission, and culture of the individual institution.

These are lessons from a series of webinars held by Worcester Polytechnic Institute (WPI) and its Center for Project-Based Learning (CPBL), and hosted by *The Chronicle of Higher Education*, during the past year.

Held at a time when institutions look to implement more high-impact practices, the webinars explore how to instill those practices by adding project-based learning to courses and using PBL to create programmatic change or even reinvent an entire curriculum. Research conducted over 30 years has shown that PBL can enhance education by making students active participants in collaborative learning.

“There’s considerable evidence that high-impact practices have a greater educational benefit for students on average than traditional education,” says Richard Vaz, senior fellow of the Center of PBL at WPI. “Those practices are particularly beneficial to students who are traditionally underserved by colleges.” Well-designed PBL courses or programs can integrate many if not most of [the 11 high-impact practices recognized by the Association of American Colleges & Universities](#), Vaz adds.

Worcester Polytechnic Institute has long based its own programs around PBL and has developed the expertise that comes with it. Surveys of WPI graduates show that [alumni view](#) PBL as a very valuable part of their learning. Nearly 9 in 10 said that PBL helped them learn to develop ideas, form a stronger personal character, and solve problems.

“WPI alumni have noted the significant impact PBL has had on their personal and professional lives,” says Kristin Wobbe, director of the Center for PBL, which provides training for higher education faculty and administrators on best PBL practices. “PBL has allowed them to take charge of their own learning. And those employers who have been aware of PBL say that WPI has produced workers who are well-equipped from the date of hire.”

WPI worked with *The Chronicle of Higher Education* to produce three hour-long [webinars](#) that explored many facets of project-based learning. Vaz and Wobbe led wide-ranging discussions that included six college and university leaders who represented a broad range of institutional types, and who told their stories about applying project-based learning in their classrooms and programs.

Below are some of the key takeaways from those discussions. For more examples of PBL in action, as well as valuable tools and resources, sign up to receive WPI’s quarterly [Project-Based Learning Newsletter](#) featuring curated information about PBL in higher education.

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PBL can be successfully implemented in a wide range of disciplines and institutional types.

“When we launched the Center for PBL, we believed there’d be sufficient interest in the higher ed community, but we weren’t sure where that interest would be focused. If anything, we expected a lot of the interest would come from STEM-focused universities like WPI. Interestingly, that hasn’t been the case. We’ve worked with more than 150 colleges and universities to date, and no more than 10 or 15 percent of them are STEM-focused. We’ve seen plenty of interest from liberal arts colleges, comprehensive universities, community colleges—I’d say it’s quite representative of U.S. higher education.

“In this webinar series, we’ve heard about PBL initiatives at Bellevue College, Colorado School of Mines, Miami Dade College, Nebraska Wesleyan University, Virginia Tech, and Wake Forest University. Despite their differences, these institutions have some common goals. They look to make general education more impactful and distinctive, for example. They look to increase student engagement. They look to increase engagement with the community.”

—Richard Vaz



Many colleges are now focusing on PBL in general education and humanities curricula.

“We want to enable topics that use themes outside those typically receptive to PBL formats—topics that come from the arts and humanities in particular. So, our pilot courses are meant to exemplify how almost any theme (including a literary, historical, or philosophical one) can generate student projects. For instance, within our Democracy Thread, we’ve piloted and started teaching a course titled ‘What If, Why Not?’ in which students devise projects focused on civic engagement on campus, such as creating an abatement plan for disposable plastics in the dining halls. This has become a model for creating a continuing program of PBL courses, where projects allow students to apply the learning from their coursework, using projects as the integrating tool.”

—Patrick Hayden-Roy, professor of history and associate provost of integrative and experiential learning at Nebraska Wesleyan University, a private university

PBL can be affordable for institutions.

“PBL doesn’t require a vast amount of resources. You don’t need to have fancy labs, or expensive materials, or to fly your students abroad. You can do impactful things with the resources you have on your campus and with your existing network of community partners.”

—Michael Reese, director of program development at the RISE Learning Institute at Bellevue College, a community college in Washington

Project-based learning modules can stretch to fit a wide variety of courses and majors, and can reach all kinds of students.

“PBL is infinitely flexible. That’s one of the beautiful and beneficial features of it. Projects can be devised to further the learning objectives of a wide variety of courses. They can be designed to be appropriate to novices on through to advanced learners. They can be adjusted to fit an institution’s culture and mission. Given that flexibility, there’s no reason that any kind of institution couldn’t find places to incorporate projects into their pedagogy.”

—Kristin Wobbe

“We have a faculty team that actually started working to infuse project-based learning into the curriculum around the beginning of the pandemic in March. They went on to launch an interdisciplinary course in August in health sciences. The course had several facets, including partnering with robotics faculty and helping students build prosthetics and robotics for the health care industry. During the full lockdown phase, we had some other really interesting projects emerge, including one based around the women’s suffrage movement. Students designed an interactive website on the movement’s history. And our chemistry group that attended the CPBL institute is trying to bring undergraduate research principles into their intro classes.”

—Kim Filer, associate vice provost for teaching and learning at Virginia Tech, a public land-grant, research university

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“PBL plays a big role in our diversity, particularly women and low-income and first-generation college students. Students become leaders and are our champions for PBL. We tie PBL very closely to our metrics on diversity and inclusion.”

—Juan Lucena, professor of engineering, design, and society at the Colorado School of Mines, a public university

Project-based learning can add value for faculty, as well as bring them together to improve teaching. Educators who already teach in similar ways can link up with each other to enhance their pedagogy.

“PBL gave us a common language to link up various pedagogies that work in somewhat similar ways. What was surprising and exciting for us is that we discovered 130 faculty already doing projects in their classrooms. We were able to bring together various support service offices across campus that were previously in silos. It was a great way to bring faculty together who don’t normally work with each other so they can help one another think about developing their teaching practices. We built a bigger community instead of staying in smaller silos.”

—Betsy Barre, executive director of the Center for the Advancement of Teaching at Wake Forest University, a private university in North Carolina

“To try and get as many people to the table as possible, we have an ‘it-takes-a-village’ approach. Whether we’re talking about PBL in undergraduate research or in academic service learning, it doesn’t matter. We’re all going in the same direction. And we’re not trying to compete with each other. We’re just supporting each other and aligning where it’s natural and effective. Marrying faculty expertise with institutional resources in order to build sustainable professional development is a strong strategy.”

—Margaret Shippey, director of faculty development and classroom engagement at Miami Dade College, a public college in Florida

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“If you can find a mechanism for bringing folks together around PBL regularly, maybe once per semester, that can go a long way. Encourage them to bring interested colleagues along. Communities of practice can form in voluntary and organic ways, if you provide a little structure—and maybe some refreshments. Of course, you can get even more done if there are resources to support course redesign and other faculty efforts, or if you have an annual ‘PBL showcase’ where folks from around campus can see what students are creating through their project work. To the extent possible, celebrate student success and elevate faculty accomplishments.”

— Richard Vaz



A leader in project-based learning for more than a half-century, Worcester Polytechnic Institute (WPI) is also a driving force behind helping colleges and universities put PBL to work for them. WPI's Center for Project-Based Learning, formed in 2016, offers an annual institute, faculty development workshops, consultations, PBL resources, and more. For more information, [contact the Center](#) or visit wpi.edu/+projectbasedlearning.

