

Webinar Highlights

Project-Based Learning as a Vehicle for High-Impact Practices: Reinventing Programs



As colleges and universities search for fresh ways to engage students and improve teaching, many are turning to high-impact practices. These can involve experiential learning or service projects that offer students a glimpse of the work world, while helping them develop solutions to real-world problems. Proponents say that courses that incorporate one high-impact practice – project-based learning, or PBL – can improve student learning.

Along with offering specific courses, including introductory gen-ed classes and capstone experiences, that feature PBL, some institutions have begun to enhance entire academic programs by using this increasingly popular pedagogical practice.

On February 4, *The Chronicle* held the second of three hourlong webinars in partnership with Worcester Polytechnic Institute (WPI). Called “Project-Based Learning as a Vehicle for High-Impact Practices: Reinventing Programs,” this webinar examined how institutions can reinvigorate a wide range of programs by

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infusing Project Based Learning (PBL) courses into them. WPI, a longtime leader in implementing PBL, has 50 years of experience in weaving PBL throughout its academic programs and within each year of an undergraduate's four years of study.

Moderated by Michael Anft, a *Chronicle* contributing editor, the webinar featured Rick Vaz, co-director of the Center for Project-Based Learning at WPI; Juan Lucena, a professor of engineering, design, and society at the Colorado School of Mines, where he also serves as director of humanitarian engineering undergraduate education and outreach; and Patrick Hayden-Roy, a professor of history and associate provost of integrative and experiential learning at Nebraska Wesleyan University.

The following comments represent key takeaways from the webinar. To hear the full discussion, register at chronicle.com/PBLwebinar2.

While STEM majors typically include some PBL as a regular part of their programming, other types of majors are now using this pedagogical method more often.

“When we launched the Center for PBL, we believed there would 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 ourselves. Interestingly, that hasn’t been the case. We’ve worked with over 140 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.” — Rick Vaz



Some colleges are now focusing on making sure PBL is included 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 pilots 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 now taught a number of times a PBL 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 ‘knotting’ courses, where projects allow students to apply the learning from their coursework, using projects as the integrating tool.” — Patrick Hayden-Roy

PBL programming can help students understand the complexities of the real world more completely.

“In our field-based courses working with artisanal gold miners in Colombia and Peru, students have learned to understand and value communities as more than clients. They have begun to see them as entities that have a history of struggles, as possessors of valuable local knowledge, and as places where people have respectable desires for the future. Via PBL, we are going beyond traditional engineering criteria, which typically focus on technology, and beyond student learning criteria, which focus on the student. We’re able to make humanitarian engineering criteria, which focuses on communities, more central to how we scope, develop, and evaluate our projects.” — Juan Lucena



In an age when real-world problems must be solved via collaboration and with the help of a wide variety of perspectives, PBL can give students a stronger idea of how they can work across disciplines and professions.

“Increasingly, we’re seeing approaches to general education that are interdisciplinary. In my mind, PBL is a very effective strategy to promote interdisciplinary learning, since authentic, real-world problems are inherently messy and require multiple perspectives. PBL can also be an effective approach to community engagement, which is increasingly a goal for institutions of all types.” — Vaz

Programming that includes PBL can help courses and majors become more diverse and inclusive.

“We have close to 80 percent female representation in our humanitarian engineering program, which is incredible in our field. PBL has played a big role in this. We have tied PBL very closely to our metrics on diversity and inclusion. PBL has also helped us appreciate what low-income, first-generation students have to offer, such as the ability to solve problems in an environment of scarcity, as well as the empathy they have for others in similar economic situations. Often, these students become leaders and are often our best champions for PBL.” — Lucena

By including PBL throughout the curriculum, many institutions can better fulfill their strategic designs.

“PBL is a very effective pedagogy for connecting students with each other, with faculty, and with communities. That kind of pedagogy can help universities achieve the strategic visions many have for themselves right now. I would encourage faculty to look at PBL as a way to participate in these strategic plans.” — Lucena

Many institutions are looking to add value to the student experience by introducing far-ranging curricula that focus on PBL.

“Over the last five years, we have implemented a substantial curricular revision that resulted in what we call the Archway Curriculum, which has at its center the integration of student learning and the grounding of it in experiences beyond the classroom. Like many institutions of our sort, we are seeking to attract students in an era when students and their parents are asking, ‘What is the value of what you provide in relation to what it is costing us?’” — Hayden-Roy

PBL is an effective method of pedagogy and programming for a variety of institutions.

As the experiences of Colorado School of Mines and Nebraska Wesleyan University — an engineering college and a private liberal arts university—attest, PBL can be employed successfully at a range of institutions and throughout a variety of disciplines. — Michael Anft