

# D-LAB TEACHES INNOVATION SKILLS TO AGRICULTURAL STUDENTS

How do you teach innovation? A partnership under Feed the Future is empowering university students to solve real-world agricultural problems while learning the nuts and bolts of how to innovate.

“We set out to teach the students some skills in metal work, the design process and appropriate technology—and they end up learning empowerment and teamwork,” explained Jorge Espinosa, with the Panamerican Agricultural School, Zamorano, in Honduras.

Espinosa is an instructor for Zamorano’s version of D-Lab, a concept course originally started at the Massachusetts Institute of Technology. Now replicated and adapted for students at multiple universities, the D-Lab model focuses on “Development through Dialogue, Design and Dissemination.”

Espinosa’s work with D-Lab started at the University of California, Davis, where Kurt Kornbluth leads students through two D-Lab classes each year that result in feasibility studies and prototypes, with a focus on external clients’ needs. One of Kornbluth’s clients was the Horticulture Innovation Lab, which was seeking solutions for smallholder farmers, such as ways to keep fruits and vegetables cool during transport to market.

“After serving as a D-Lab client, we saw potential value in offering D-Lab courses to students at universities in Honduras and Thailand where we have Regional Centers that act as hubs for our work,” said Britta Hansen, of the Horticulture Innovation Lab. “Not only could D-Lab provide skills to students—tomorrow’s agricultural leaders—but it could also support our partners in adapting new solutions to local farming challenges.”

Each university that offers D-Lab must adapt the course to meet its needs and standards. With its learn-by-doing ethos, Zamorano seemed like a good match for D-Lab.



HORTICULTURE INNOVATION LAB PHOTO / ERIN MCCUIRE, UC DAVIS

**Instructor Jorge Espinosa discusses how to recycle an old saw blade with college students studying agriculture at the Panamerican Agricultural School, Zamorano, for a project during a D-Lab course in Honduras.**

“[Zamorano] is very hands-on, but it can be mechanical, like a recipe. I think that is the magic of D-Lab, that the students are not given recipes,” Espinosa said. “We have adapted it to not be a class, but a work experience—a learn-by-doing module, Zamorano style.”

So far 70 Zamorano students have participated in six D-Lab modules, intended to foster student creativity and provide a space to make mistakes and learn from them.

In a curriculum review, 71 percent of Zamorano’s D-Lab students reported they would “definitely respond more creatively” when approaching future problems, and 87 percent reported being very comfortable with presenting new ideas in D-Lab. Overcoming an aversion to failure proved to be an essential component of the course. On average, students built

more than three prototypes for every one prototype that worked as expected, with 80 percent learning “very much” from failed prototypes.

“What I am taking [from D-Lab] is the magnificent experience of practically inventing something,” reported one student. “Like [Espinosa] said to us once: There are no mistakes, there are only opportunities to develop... You always learn in the end.”

In addition to the D-Lab course at Zamorano, the Horticulture Innovation Lab team has started a D-Lab at Kasetsart University in Thailand, with 29 students in its first class. The Horticulture Innovation Lab Regional Centers continue to support and improve D-Lab courses at these universities.



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