

November 15, 2009

# A Teaching Experiment Shows Students How to Grasp Big Concepts

## Instructors at Indiana U. break student-stumping concepts into small, evidence-focused steps



Ben Weller for The Chronicle

David Pace is a director of Indiana U.'s History Learning Project, a course-redesign effort that is drawing attention from scholars in many disciplines.

By David Glenn

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*Why were Nazi critiques of Weimar-era art persuasive to many Germans? What historical experiences predisposed some Germans to share the Nazi perspective on modernist culture?*

All too often, undergraduate history students make a hash of essay questions like those. They fill their blue books with disconnected strings of names and dates. Or they sketch a plausible argument but leave out supporting evidence.

Several years ago, a small group of faculty members at Indiana University at Bloomington decided to do something about the problem. The key, they concluded, was to construct every history course around two core skills of their discipline: assembling evidence and interpreting it.

Their course reinventions are now drawing attention from scholars around the world, and from disciplines far afield from history. Every area of study, the Indiana scholars say, has its own distinctive bottleneck—concepts or tasks that many students never quite grasp. Biology students, for example, have trouble developing accurate mental images of molecules. Many professors are so familiar with these bottleneck concepts that they find them difficult to explain.

The historians at Indiana have tried to help students through several specific bottlenecks by dividing large concepts into smaller, evidence-related steps. ([See the box below.](#)) In some courses, the professors have found that students' essays have significantly improved; in others, they have been disappointed in students' final-exam performances. But the professors are

convinced that they are onto something. Most heartening, they say, is that students throughout the department are demonstrating a much fuller understanding of what historians do.

Scholars from elsewhere have come on pilgrimages to learn about the department's model, which the Indiana scholars refer to as "decoding the disciplines." Last month alone, historians from as far away as Australia attended a daylong workshop in Bloomington, and a member of the Indiana team led a cross-disciplinary session at the annual meeting of the Professional and Organizational Development Network in Higher Education, in Houston.

"Students come into our classrooms believing that history is about stories full of names and dates," says Arlene J. Díaz, an associate professor of history at Indiana who is one of four directors of the department's History Learning Project, as the redesign effort is known. But in courses, "they discover that history is actually about interpretation, evidence, and argument."

### **Let's Go to the Videotape**

The Indiana historians began their project by turning a mirror on themselves, almost literally. Seventeen members of the department participated in long, videotaped conversations about challenges they faced in their teaching.

As those conversations proceeded, the professors realized that they expected their students to perform a variety of complex interpretive tasks, but that they rarely modeled those tasks in the classroom. The processes of finding, assessing, and synthesizing historical evidence had become so automatic for these scholars that they sometimes barely knew how to convey them to their students.

Armed with small grants from the Spencer Foundation and the Teagle Foundation, Ms. Díaz and several of her colleagues have redesigned their courses so that students are relentlessly and explicitly taught how to discover and analyze evidence. Those skills, she points out, will serve students well even if they pursue careers that have nothing to do with history. In September the department's members voted unanimously to develop its undergraduate curriculum around specific analytic skills that students should master in 100-level, 200-level, and upper-level courses.

### **Breaking Things Down**

One of the Bloomington department's experimental courses is "Paris and Berlin in the 1920s," an intermediate class with 50 students. On an October afternoon, the course's instructor, David Pace, who is one of the learning project's directors, lectures briefly and then asks the students to work in small groups.

"Imagine that you're overhearing an argument in Berlin in 1926 between a 60-year-old conservative and his radical 25-year-old son," the history professor tells the class. "They're arguing about Otto Dix's portrait of Sylvia von Harden." (Von Harden was a journalist, and the painting depicts her wearily smoking a cigarette at a cafe.) "How does each of these people respond to the painting? I want you to list three historical experiences that might have shaped

each of their reactions. You can assume that the son fought in the war. Cite specific things that you've read, and explain why they're relevant."

The design of the course is to drill students on small tasks as often as possible. In advance of many classes, the students perform online assignments that highlight particular steps in the analysis of historical evidence. One task was to find three textual passages that illustrated the differences between Thomas Mann's and Rosa Luxemburg's responses to World War I.

"To succeed on an essay exam requires a host of different operations," says Mr. Pace. "When you break things down into pieces, it becomes much easier to assess where the students are succeeding and failing."

Breaking the tasks into small steps does not amount to hand-holding, he insists. If anything, he says, students must work harder in this model than in traditional courses. And they are still expected to put all of their skills together in the essay assignments and final examination.

The course's graduate teaching assistant, Lauren E. Miller, says, "One of the things that we talk about in the History Learning Project is the importance of repetition. We don't just want to teach skills once. Students do these exercises every single week."

In an interview after the Berlin-in-1926 exercise, Doug R. Miller, a junior neuroscience major (and no relation to Lauren), says, "The online assignments are helpful because they help you learn how to use the material. So when it comes time to write the long essays, you know how to draw on facts and make an argument."

Both Mr. Pace and Ms. Miller say that they are pleased with how the students performed on the semester's first major essay. But not all of the project's experiments have been so immediately rewarding. Ms. Díaz was disappointed by some elements of her survey course in Latin American history last year.

"I modeled the analytical steps throughout the course," she says. "But in the final exam, I found that many of the students still weren't applying them." This year, Ms. Díaz is making bigger changes in her instructional design, including more in-class group exercises like the ones Mr. Pace employs.

"Arlene and other people in the program have really had a great willingness to admit failure," says Joan Middendorf, associate director of Campus Instructional Consulting, a faculty-development office at Bloomington. She is also one of the History Learning Project's four directors. "They're willing to try new strategies if things don't seem to go well the first time."

### **Searching for Breakthroughs**

In 2004 Ms. Middendorf and Mr. Pace edited a special issue of the journal *New Directions for Teaching and Learning* that was dedicated to the notion of decoding the disciplines. Since then they have consulted with scholars in areas as far afield as astronomy and biology. "It's hard to do

this research," she says. "These projects can be very messy, but also extremely rewarding after you've made some breakthroughs."

And how will those breakthroughs be detected? Mr. Pace does not want to succumb to wishful thinking. Just because a history course feels more engaging and productive, he says, doesn't mean that students are actually acquiring the analytic skills they need. As the department builds its new curricular model, he hopes that every course will include well-designed essay tests and other assessments that actually capture those skills.

At the same time, Mr. Pace and his colleagues say the project will collapse if they try to enforce a one-size-fits-all model across the department. "No one wants to have their syllabi or their methods dictated to them," says Marissa J. Moorman, an assistant professor of history, who has recently redesigned a course on conflict in southern Africa.

Ms. Moorman says she has not gone as deeply into the decoding-the-disciplines model as some of her colleagues have. But she is delighted to be part of the project. The Indiana department, she says, is far more focused on the quality of undergraduate teaching than are other institutions where she has studied and taught.

That comment is echoed by Leah Shopkow, an associate professor of history and the learning project's fourth director. "Everyone in the department has been willing to put their ideas on the table," she says. "And my hope is that we'll be able to create an environment where learning is deeply pleasurable."

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## Getting Out of the Bottle

Students' trouble understanding basic concepts creates a learning bottleneck. Indiana U. instructors used different strategies in three history courses to get students through them.

**Course:** Colonial Latin American History

**Bottleneck:** Students had trouble identifying relevant information from primary documents and relating it to course themes.

**Strategy:** Periodically students were given sets of documents (maps, letters, legal records) and asked to extract information from them.

**Course:** Freshman Seminar on 19th-Century Parisian Culture

**Bottleneck:** Students had trouble using pieces of evidence to support a historical argument.

**Strategy:** In weekly online assignments, students had to answer questions such as, "For this argument to be valid, what factual premises would need to be true?"

**Course:** Medieval Heroes

**Bottleneck:** Primary sources (in this case, heroic tales) were created with a particular audience in mind, but students did not understand that such creations thus reveal things about those audiences.

**Strategy:** Students completed weekly assignments in which they were asked about a source's likely original audience, and how that audience might have responded to it.