

**BUILDING HABITS—AND HABITATS—OF INTEGRATIVE LEARNING**

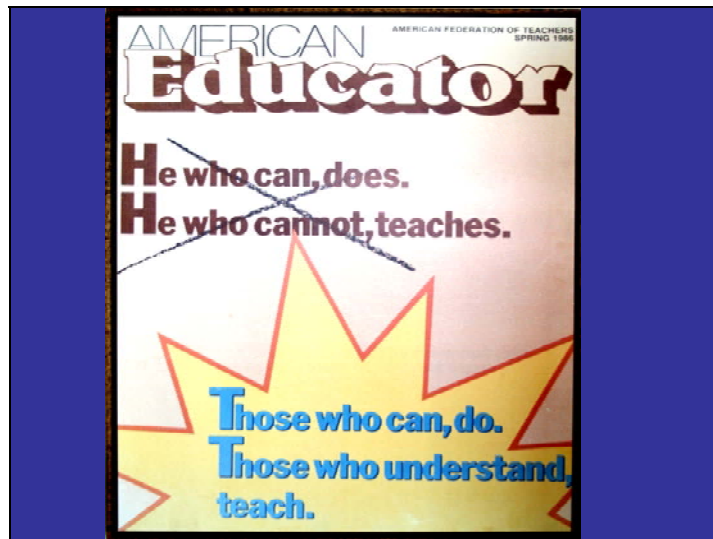
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The Carnegie Foundation for the Advancement of Teaching

Plenary Address  
Association of American Colleges and Universities  
Network Conference on Integrative Learning

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Denver, Colorado

Good morning, and thanks for being here. The Carnegie Foundation is delighted to be partnering with AAC&U in a project on integrative learning, and to be part of this conference.

Our president, Lee Shulman, could not be here today—but he sends greetings and thanks for your work. And to bring him just a little closer I brought along in this first slide a poster that hangs in his office: the cover of *American Educator*, the magazine of the American Federation of Teachers, which Al Shanker had designed after Lee’s address to the American Educational Research Association, in which he talked about the forms of understanding needed by teachers.



I like the poster because it corrects that nasty comment about teachers (originally from George Bernard Shaw, as I understand it, but borrowed by others, including Woody Allen, who added a line: “Those who can, do; those who can’t, teach; those who can’t teach, teach gym”...giving *all of us* something to be insulted by). But I’m also showing it to you because it foreshadows my approach to our topic this morning, and helps to gloss my title: Building Habits—and Habitats—for Integrative Learning.

I think it’s useful to begin by saying something about the meaning of the phrase “integrative learning.” One of the pieces in the recent issue of AAC&U’s *Peer Review*—by Deborah Dezure, Marcia Babb, and Stephanie Waldmann—points out that there’s no real consistency in how the term is used, and a piece by Julie Klein in the same issue

does a lovely job of tracing the history of a cluster of related terms. But another way to think about what “integrative learning” means is to look at who we are, assembled here today.

Looking over the program and the roster, it’s striking, first, to see the great variety of campuses: large, small, public, private, research universities, liberal arts colleges, two and four year, residential, commuter, different in all kinds of ways that shape the possibilities for—and challenges to—integrative learning.

Some of you are faculty and you may well be interested in how students integrate ideas within your field. Some of you are developing programs that ask students to integrate across disciplines, or across disciplines and professional fields. Some of you have roles in student life and come to this event with a special interest in connections between curriculum and co-curriculum. Many of us, regardless of role, are committed to helping students translate academic learning into action in the community and larger society. Looking over the program I’m also struck by the interest in how various kinds of learning come together—intellectual, emotional, spiritual, even physical.

In short, integrative learning, as defined by our interests here today, is a big tent, and I think we want to keep it that way—with plenty of room for all of us who think that higher education could do a better job of helping students put the pieces of their education together in more powerful ways. We’re very good at taking things apart in academe, and that’s an important thing to do when you’re trying to understand something new, but clearly our premise here at this conference is that we need to do more to help students connect the pieces. As I heard someone quip recently, they shouldn’t have to reboot in every course.

What I also want to underline is the idea that integrative learning (as opposed to curricular coherence or program integration, for instance) is a capacity that students must develop. This point is nicely captured in a line from the AACU/Carnegie statement on integrative learning:

“Fostering students’ abilities to integrate learning—across courses, over time, and between campus and community life—is one of the most important goals and challenges of higher education.”

— From *A Statement on Integrative Learning*,  
Association of American Colleges and  
Universities and The Carnegie Foundation  
for the Advancement of Teaching

The idea of students as agents of integration is also at the heart of my thesis this morning --in three parts:

1. Students need to develop their *own* abilities and habits of integration.

You can lead horse to water and you can lead a student to a possible connection, but, as we know from research on learning, it’s the student, finally, who must actively construct and make sense of that connection.

2. This means students need to be *smarter* and *more intentional* about their own learning.

As many of you know, intentional learning is one of the key themes from AAC&U’s *Greater Expectations* report. It’s especially important to integrative learning.

3. And one of the best ways (not the only one) to make students smarter and more intentional and more able to engage in integrative learning is to involve them in the work of teaching.

Lurking behind this final point is an old bromide—it’s been said in different ways by different people, and no doubt by many of us—that if you want to learn something well, try teaching it. It’s the cousin to the point on Lee Shulman’s poster. Not only do those who understand teach, but those who teach understand! The trick is to make this point more than a cliché—to put it into practice in ways that promote integrative learning. And that’s what I want to talk about today.

## AN EXAMPLE FROM THE LIFE SCIENCES

**AN EXAMPLE:  
HEIDI ELMENDORF**

"Shall Microbes Inherit the Earth?"

Georgetown Univ

Non-majors--  
Science averse

Partnering with a DC school

"Architects of learning"

A portrait photograph of Heidi Elmendorf, a woman with dark hair, smiling, wearing a dark top. The photo is set against a light background and is positioned to the right of the text on the blue slide.

Let me begin with an example from the life sciences. Heidi Elmendorf, a faculty member in microbiology at Georgetown University, was part of Carnegie's program on the scholarship of teaching and learning—CASTL—which is where I got to know her work. Her project in that program was to examine what happens when her students in an introductory course for non-majors take on roles as teachers at a local elementary school in lieu of the usual lab. She got this idea, by the way, from a student in a prior semester, who was volunteering as a tutor in the DC schools.\*

So here's how it works: The class partners with a DC public school to develop and teach 6 units on microbiology topics appropriate for the students at that level: vaccinations, for example, bioterrorism, water quality, etc. The first half of the term is spent developing inquiry-based lessons in preparation for the second half which students spend—working in pairs—in the elementary school, teaching. At the same time, they work together with Elmendorf to troubleshoot problems—scientific and otherwise—they encounter as teachers and learners of science.

So, an important point here is that students both design lessons and conduct them. It is, in fact, the structuring of knowledge in order to teach it that Elmendorf sees as especially powerful for these undergraduates. And her metaphor for what happens as a consequence is that students become “architects” of their own learning—in large part

because they have to step back from the course material to translate and transform it in ways that others can learn from. She and her colleague Randy Bass, from the English department, have begun calling this “relearning.”

This concept of relearning is in part a result of Elmendorf’s project as a Carnegie Scholar with the CASTL program, in which she systematically examined her students’ experience in this alternative setting. She did this in a number of ways. To get at the otherwise hidden aspects of the experience—students’ lesson-planning in their dorm rooms, last minute tinkering with plans on their drive to the school, what actually goes on in the elementary classroom, and so forth, one pair of students was followed on videotape for 13 weeks (this approach to documentation was, by the way, suggested by an English major interested in media who also did the taping).

On a simpler front, Elmendorf also asked students to write reflective essays describing the experience and its impact on them. Here are three quotes (from a much larger number) from their essays:

“I knew I could get a better understanding of the course materials if I was forced to explain and teach it to others.”

“I suddenly cared a lot more about what I was learning and seemed to be better able to pull out the essential information and the aspects of science that applied to my life.”

“I noticed a fair amount of overlap between the basic materials I wanted to teach and the information we were learning at a more complex level in our regular class. The fact that I could simplify cells, bioremediation, bacteria in foods, etc., gave me significantly more confidence in the work I was doing at the higher level.”

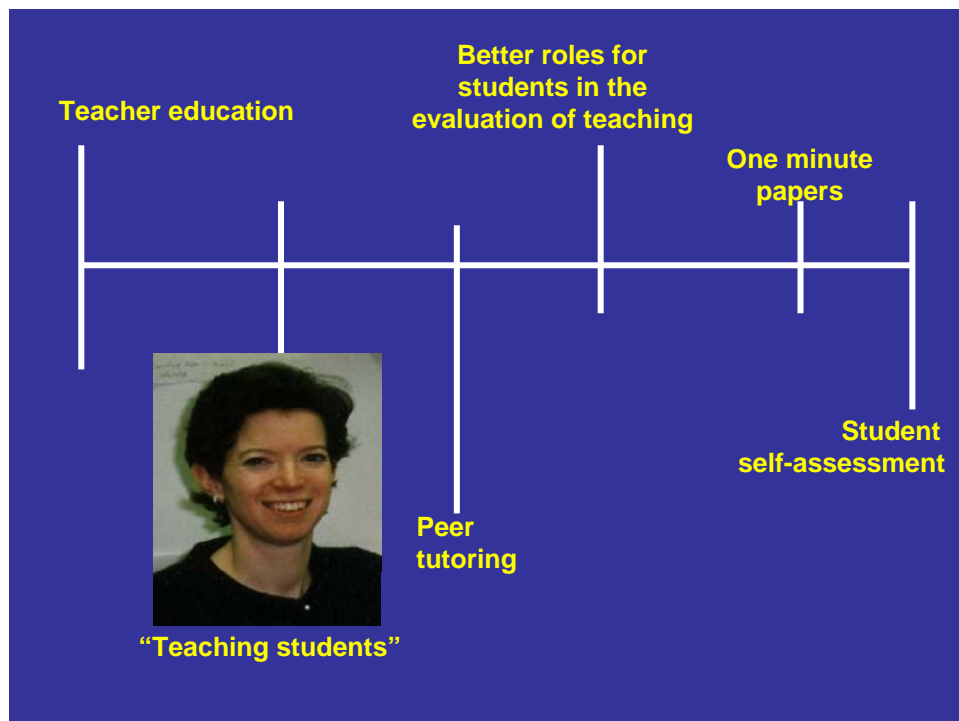
So—you may ask—in what sense are the comments in these statements reflective of integrative learning (a category that Heidi herself didn’t use, I should say)? My claim is that what we’re hearing in these student comments are emergent habits of integrative learning:

## (Emergent) Habits of Integrative Learning

- Relating what I know to what others know (and don't)
- Connecting different levels of understanding
- Translating academic knowledge into meaningful action
- Understanding how the discipline applies to my own life.

### ACTIVITIES THAT PROMOTE INTEGRATIVE LEARNING

I realize that most of you aren't in a position to do what Elmendorf has been doing. With that in mind, I want to look at other routes to habits of integrative learning. My purpose here is to begin mapping a wider range of strategies that invite students to think and act like teachers in ways that help them become more thoughtful, purposeful, integrative learners.



My map starts on the left with formal teacher education, though won't talk about that today, then moves to settings like Elmendorf's course where we find what she calls "teaching students" (to distinguish between their work and that of formal student teaching), and then onto four other possibilities: Peer tutoring, teaching evaluations, one minute papers, and student self-assessment.

### **1. Peer Tutoring**

My first strategy is peer tutoring—a close cousin to Elmendorf's approach. It typically takes the form of more advanced students assisting more novice learners. In some cases, students who have already taken a class return to tutor in a subsequent semester. But there are lots of models, and I'm sure there are lots of different examples represented in the audience.

An example I particularly like is from Carnegie's current project with eleven California community colleges, working with us on developmental education in math and English; several are using peer tutoring as part of that effort. During a site visit to one of those campuses, Merced College, I had a chance to conduct interviews with students who were in tutoring roles, and I was really struck by the story we heard from a woman who had come to college relatively late in life, wanting to study nursing. She wasn't one of those students who breezes through. It was hard for her academically and in a lot of other ways, as well. But now, in her second year, she was tutoring a group of students from a first year learning community in which she herself has previously participated. Her story stayed with me for several reasons.

First, she told us that serving as a tutor—especially in a course where she herself had struggled—had raised her confidence in herself as a learner. She talked about her determination, her sense that though it was hard, she knew she could succeed; she knew she would make it. Second, when we pressed her about the source of her new confidence, she said that the tutoring experience (thought not only that, I'm sure) had helped her understand how to go about studying and learning successfully. She was a much smarter learner. That was helping her help others, but it was also helping her in the nursing program.



## **2. Teaching Evaluations**

My next strategy is student evaluations of teaching—and, as you’ll see, I’m now stretching the boundaries of what it means to be engaged in “teaching.” It’s not just teaching roles in a narrow, literal sense that I’m interested in, but various experiences and activities that cause reflection on what is being learned and how.

Just about all campuses ask students to evaluate courses and teaching. This is a good thing, but often it isn’t as good a thing as it might be because it turns out to be a missed opportunity to make students more thoughtful about the educational process they’re engaged in.

My example of a better approach is one that I heard about some years ago at Carleton College—still in effect—called the Student Observer Program. The idea is that any Carleton faculty member can ask for a student observer to sit in on her or his class, usually for the entire term, and to provide feedback about how to improve the course from the student-experience angle. Well, that’s a nice idea all by itself, but what makes it relevant here is that the students actually get *trained* about what to look for in an effective classroom. This means they give better feedback to the faculty, but also that they get smarter and more thoughtful about what it takes to make learning happen.

Some other institutions are also doing this--maybe some of yours. And there are, no doubt, useful variations on the model. My point is that there are ways to use student evaluations—something just about all campuses do anyway—to make students smarter about learning and how it happens...and, again, the more they know about that, the more likely it is that they will be integrative learners.

## **3. One Minute Papers**

My next example is a strategy you all know—the most famous of the Cross and Angelo classroom assessment techniques: At end of class you ask students to write anonymously for one minute: what’s the most important point from this class session...and what is least clear, or what do you wish we’d come back to? You collect those comments and through them what you have is a powerful window (and sometimes a puzzling one) on how students have and haven’t been understanding what you’ve been trying to teach.

But here's the point for today's purposes: One of the things Pat Cross has reported, and many of us have discovered in our own classrooms, is that if you keep asking, students get better at answering these kinds of questions. The first time, you may get pretty skimpy, perfunctory responses. But, over time, the one minute paper (and other such strategies) become a kind of heuristic or scaffold to help students monitor and direct their own learning. Like active, critical readers, they learn to ask themselves questions as they go, check understanding, connect new ideas to other things they know...and so forth.

In short, classroom assessment techniques can help students tune in more carefully to their own unfolding learning. And, in fact, we might harness these strategies very directly to integrative learning by asking not just "What's the more important point?" but "How does this relate to what you're learning in another setting?"

#### **4. Self-Assessment**

This last item probably overlaps with and should infuse the previous items, all of which in some sense require students to take the pulse of their own learning.

But I want to treat self-assessment as a topic—a strategy—unto itself, as well, one I found especially valuable during my nine years as a faculty member, years ago now, at Alverno College. As some of you may know, assessment at Alverno is a fully integrated aspect of teaching and learning, and that includes self-assessment. Indeed, the ability to self assess is an outcome the college expects students to develop and demonstrate at increasingly sophisticated levels. At an early stage in their college work, students are simply asked to observe their performance (though that's not easy, as anyone who has watched a videotape of herself making a speech or teaching a class knows). At a next stage, the expectation is for both observation and analysis; then, later, evaluation. A final stage asks students to use self-assessment as a basis for planning next stages of learning—connecting their learning over time as integrative learners are able to do.

What makes this growth possible is that self-assessment is not something that happens just now and then. It's a consistent component that runs throughout the curriculum. So, for instance, in a writing class (and in other classes that focus on writing), students hand in their papers with a cover sheet that asks them to rate their

effectiveness on the same set of criteria that their teacher then uses as well. They can compare their own self-assessment with that provided by the teacher.

Notably, one of the outcomes the institution has articulated for all students is “habituality” in monitoring and directing her own learning.

### **WHAT IT ALL ADDS UP TO: PEDAGOGICAL INTELLIGENCE**

So, what do all of these strategies have in common? My answer is something I’m calling “pedagogical intelligence.”

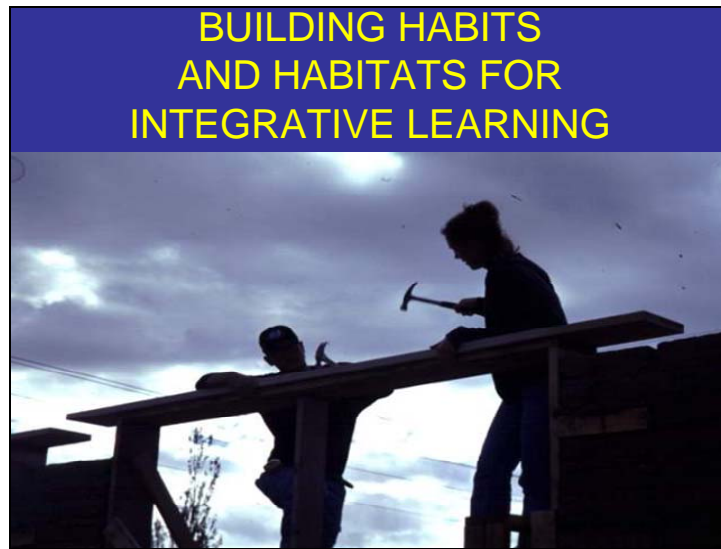


This phrase is likely to evoke, for many of you, the notion of “multiple intelligences.” Howard Gardner posits a whole set of them: linguistic, musical, logical-mathematical, spatial, body-kinesthetic, and personal intelligences. Daniel Goleman has popularized the idea of an emotional intelligence. The word “intelligence” invites some possible misunderstandings, it’s true, since it seems to suggest traits that are inherited and static, and that is not what I mean at all. As I’ve been suggesting, I think we can foster these abilities, these habits (in lots of ways probably but especially) by engaging students in acts of or thinking about teaching—and therefore learning.

This is not to suggest that Econ 101 or 19th Century American Lit should be turned into occasions to obsess about the learning process. But the disposition to be thoughtful about one's own learning, to be an active agent of learning, to find and even to

design experiences in which learning is advanced—these are goals that should be central to undergraduate education. Students who develop these habits are in an especially powerful position to do the kind of things we’re talking about at this conference.

### **BUILDING HABITATS FOR INTEGRATIVE LEARNING**



This beautiful photo was located for me by my colleague Richard Gale (who tells me these are students in a Habitat for Humanity Project), and I wanted to use it to underline something important. If we want integrative learning for all students—as what Carol Schneider has called the third pillar of liberal learning along with breadth and depth—we need to build habitats that are dedicated to this kind of learning. And this means stable, dedicated structures (learning communities, capstones, and so forth) that have connection-making as a central, shaping goal. But I want to look at another image of habitat as well.

## A Different Image of Habitat



This image—which just happens to be the view from the Carnegie Foundation on the edge of the Stanford campus—depicts a different vision of habitat, not as something we build and then move into but as an ecology of complex, ever-changing relationships. I like this image, this version of habitat, because it underlines a message I’ve been trying to convey today: that integrative learning depends not only on special structures that exist at a few key points in the student’s experience but on a whole range of activities that can and should run *throughout* the students’ experience—the kinds of things we saw arrayed on the continuum I was talking from earlier.

To put it a little differently, integration is often thought of primarily through the lens of curriculum (and increasingly co-curriculum), and as such it is often something someone else tends to: the guy who teaches the capstone, or the team that runs the learning community. My argument, in contrast, is that integrative learning brings with it a pedagogical imperative. The teaching that goes on in *all courses* is the essential habitat for integrative learning. And such teaching is a responsibility we all share.

I talked earlier about pedagogical intelligence for students. I’d like to end by talking about its corollary for faculty. And those of you who know me won’t be surprised that I believe this brings us to the scholarship of teaching and learning.

Like integrative learning, the scholarship of teaching and learning is a big tent, and the term is used in different ways by different people. But here’s a definition I like:

## The Scholarship of Teaching and Learning

- Bringing our skills, values, and habits as scholars to our work as teachers
- Framing and investigating questions about students' learning
- [www.carnegiefoundation.org/CASTL/highered/index.htm](http://www.carnegiefoundation.org/CASTL/highered/index.htm)

As this definition suggests, the scholarship of teaching and learning means seeing interesting problems and questions in our teaching and our students learning and investigating them in ways others can learn from and build on. This is a central agenda of Carnegie's work, pursued most extensively through the Carnegie Academy for the Scholarship of Teaching and Learning. In fact, I should mention that one component of that program this year is work with a group of 21 scholars who are investigating questions about how their students integrate their learning—in individual disciplines, in interdisciplinary learning communities, around civic engagement, ...many of the same goals and settings represented here. That work is a wonderful resource, and I hope you'll visit our website to find out more.

But there's another connection: because over the years of the CASTL program we've seen something very interesting happen. For many faculty, the process of examining what goes on in their classroom, trying to understand and document their students' experience as learners, is a kind of wake up call about letting students into their thinking, being clearer and more explicit with students about why they do what they do as teachers, what they expect students to do, where students might encounter difficulties, how to deal with those.

As one of my colleagues says, faculty who enter into such work often see that they've been "hiding the ball." And they begin looking for ways—if I may borrow a phrase from Gerald Graff—to make sure that students aren't left or even rendered "clueless in academe."

One CASTL scholar, for instance, developed a course portfolio to document what he learned in studying one of his classes: he then realized he should be sharing that portfolio with his students, which he did, eventually building it into his syllabus. Another—this one among the current cohort studying integrative learning—created a small seminar of five advanced students to help him gather and analyze data in an introductory course on American government where he's studying how students integrate academic learning with the real-world process of democratic governance and decision making.

You can probably see where I'm going and why. It turns out that the scholarship of teaching and learning is yet another route to building pedagogical intelligence among students (and, of course, among faculty, too), and thus another habitat for developing habits of integrative learning.

I'll end with one more example, from Western Washington University which joined the CASTL campus program some years ago. As part of their early participation in the program, they did what we asked all campuses to do—to discuss a "sacrificial definition" of the scholarship of teaching and learning, and think about how it could be adapted to fit their setting. The institution brought together a group of faculty and had very useful discussions. But along the way, someone threw a wonderful wrench into the works by noticing that there were no students at the table.

Skipping over many details, the campus eventually created a course, which is now housed in the communications department under the title "Civil Discourse as Engaged Learning," in which students study their own learning and the WWU environment for that learning. What was a surprise—to me, I confess, and to some of them—is that the course has been in steady demand. Students *wanted* that experience—they wanted, if you will, to be scholars of their own teaching and learning. And I think they especially wanted to talk to faculty about learning, which they do not only with the course instructor, but through a sort of "lab" component of the course which requires that they

participate in the Teaching-Learning Institute WWU has created, where faculty, librarians, student affairs staff and, yes, students come together regularly to talk about how the institution is doing its educational work, and what and how they as individuals are learning.

So let me end with this quote from one of the students who has been participating in this experience—a young man I’ve had the pleasure and privilege of getting to know over the last few years. Of course, his words are used with his permission:

“I had a class where we studied how we learn...it flipped a switch, and once it’s flipped it can’t be turned off.”

– Erik Skogsberg  
Western Washington University

There’s a coda. I saw Erik Skogsberg last weekend at the second annual meeting of the International Society for the Scholarship of Teaching and Learning, held in Vancouver, British Columbia. There were 650 people there, by the way, making the event half again bigger than last year’s.

I had a chance to talk with Erik during the conference. He will be graduating in May, and he’s certainly looking forward to that. But it was interesting to hear what I might call a kind of anticipatory nostalgia for his experience as part of the Western Washington University work on the scholarship of teaching and learning.

For Skogsberg and other students who have participated, that work has meant being part of a really rich intellectual community, and having the chance to become much more purposeful in shaping their own learning. I don’t think I’m putting words in his



mouth—his own words make the same point—in saying that the experience has been a highlight of his undergraduate years.

Erik is going to take next year off, but after that he will be entering graduate school with the goal of becoming a faculty member. And I would bet that his students and colleagues are going to be in for a treat, because engaging our students in acts of teaching, in thinking about learning, not only makes them better integrative learners, it's very likely to make them terrific future faculty colleagues to those of us who care about the quality of undergraduate education.

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\*For more information about Heidi Elmendorf's work, see her recent article in *Change* magazine, "Learning through Teaching: A New Perspective on Entering a Discipline," November/December, 2006, pp. 36-41.