

INTEGRATIVE LEARNING AS AN INTELLECTUAL ART

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I'm delighted to join you at this conference, and in exploring efforts across your campuses to advance integrative learning. It's a special honor to be here because, as you know, The Carnegie Foundation has been working with AAC&U and ten campus partners—many of them represented here--to develop and assess advanced models and strategies to help students pursue their education in more intentionally connected ways. So let me begin by congratulating you first, for the work you're doing in your courses, departments, programs, and institutions to help students see connections across disparate concepts, fields and contexts, and second, for making your work public so that we can all learn from each other.

Let me also acknowledge that this whole area is as perplexing as it is consequential. After all, the goal is to help students integrate their learning in the face of an often dis-integrated academic experience, in hopes that it will prepare them to do the same later on. So, the question is: how can we help students develop the intellectual arts (as Carol Schneider would say), “habits” (as Pat Hutchings would put it), or “tools of thought” (following Michael Burke and Jean Mach), that enable them to bring together what they are learning while in college in ways that they can use again and again in making informed judgments when they're out of college, facing the uncertainties of personal, professional and civic life?

¹ This paper was presented in the closing plenary panel at the AAC&U Network Conference on Integrative Learning in Denver, CO on October 21, 2005.

There have always been students who “get integration,” of course. But what’s new today is that institutions are trying to help *all* students see larger patterns within and across courses, over time, and between academic, personal, and community life. To put it differently, the capacity for integrative learning—for connection making—is coming to be recognized as an important learning outcome in its own right—not simply a hoped for consequence of the mix of experiences that undergraduates usually have (Huber and Hutchings, 2004).

What is Integrative Learning?

But what is integrative learning? Well, let me start with an example from amateur astronomy, which, thanks to developments in technology, is once again making real contributions to knowledge about the universe. Timothy Ferris, who wrote about all this in *The New Yorker* a few years ago, interviewed Barbara Wilson of Houston, who though an amateur, is “said to rank among the world’s most acute visual observers” of the skies.

And here’s what she said: “You can’t be a know-it-all. The first time that you think you know something, the sky will knock you down to size. But it’s all so beautiful. You look at a hurricane on a map and you see its spiral structure, and you watch the spiral structure of water swirling down the drain in a bathtub, and you look up in the sky and you see these spiral formations of galaxies—all the continuity in nature, this repetition of pattern. It just makes you feel good to be alive” (Ferris 1998, 60).

Fostering the intellectual art of making, recognizing, and evaluating sound, meaningful connections across different concepts, cases, or experiences is what integrative learning is all about. Of course, we’re not only talking about repeating

patterns, but also about an appreciation of context or engaging theory with practice. Whether it's learning to see culture in a Balinese cockfight, as you might in an anthropology course, or to bring ethical considerations to a real-world problem in engineering design, there are many kinds of connections that we would like college students to learn to make.

To be sure, there's a sense in which *all* learning is integrative, if only because new ideas must somehow be connected to old. But when people single out integrative learning as deserving special attention, they are usually talking about larger leaps of imagination rather than little ones, about mastering intellectual arts that can be used to make productive, provocative, and memorable connections between domains that have usually been—in one's personal, academic, or cultural experience isolated, separated, or kept apart. Or, as one College of San Mateo student in Mike Burke's and Jean Mach's Math and English learning community said: it's about "tying things together that don't seem obvious, like running times and equity."

Think for a minute, if you will, of a memorable occasion of integrative learning that you have experienced yourself. At the Carnegie Foundation this summer, we asked that same question of the twenty-one faculty from different fields and types of institutions who won fellowships to the Carnegie Academy for the Scholarship of Teaching and Learning to examine what they can do in their own courses to help students become better integrative learners. And here's a sampling of what they said:

Many remembered assignments—provocative ones that had legs, like the chemistry professor who recalled a project in an anthropology course she had taken in college, in which teams of two students chose a grave in the local cemetery, and then

followed the trail of the person memorialized there through the symbolism of the marker, to county records that would identify the cause of death, and on out to the history, sociology, and culture of health and disease. For a professor of education, it was learning karate—and all that went with it: pulling together bits of Japanese language, culture, and history; some anatomy and physiology; and (of course) the art of handling the body in attitudes of respect, patience, and focus.

We heard about experiences like practice teaching and crevasse-rescue training in mountain climbing, which brought theory and practice together in experiences that strongly engaged the emotions. And a philosopher talked about a professional meeting in which faculty from different fields listened to environmentalist John Elder read a Robert Frost poem, and then spoke to it from their own different disciplinary understandings.

What made these experiences so meaningful and memorable, I think, was that sense of insight or discovery that one gets from making unexpected connections. And there are a great many unexpected connections to make. We live in a large, complex society where we—and our students-- are constantly rushing to fill roles that are measured out with coffee spoons (to borrow a line from J. Alfred Prufrock), restricting our experience, blinkering our view, and making real travel across boundaries hard to do well.

We all know from the study-abroad programs reported on by Michigan State University and Carlton College that real travel brings culture shock. And we know that patterns can be illusory—remember the tragic story of the Nobel Prize winning mathematician John Nash in *A Beautiful Mind*? Comparisons, too, can be misleading—even intentionally so. As Adam Cohen put it in a New York Times column last spring:

“We are living in the age of the false, and often shameless analogy. A slick advertising campaign compares the politicians working to dismantle Social Security to Franklin D. Roosevelt. In a new documentary, ‘Enron: The Smartest Guys in the Room,’ Kenneth Lay compares attacks on his company to the terrorist attacks on the United States.” Indeed, Cohen concludes, “Intentionally misleading comparisons are becoming the dominant mode of public discourse. The ability to tell true analogies from false ones has never been more important” (2005, 10).

This conference has been about building “habitats” in our courses, curricula, and co-curricula to help students learn to manage this complexity, to reflect on what they do, hear, and feel more carefully, cross boundaries more confidently, and seek, make, and evaluate connections more readily throughout their lives. They will need all the wisdom, intelligence, and creativity that Robert Sternberg outlined for us on Thursday night.

Let me return to recollections of integrative learning, and to amateur astronomy, but at an early, introductory stage: One of the historians in the scholarship of teaching program said that the most memorable educational experience he could recall was from a high school physics course: he and his classmates had to trace a celestial object over several weeks, a task that involved using a sextant, applying mathematics to interpret the findings, reading about Galileo, becoming aware of the ecology of autumn when the observations were made. In his own words, it became—if not in the moment itself, at least in telling about it over the years—a “thoroughgoing experience of connecting to the universe,” and the point to which he traces the beginnings of his life-long professional interest in ecology and the history of environmental thought.

I know that Robert Sternberg warned us about the superman complex that can afflict those who are intelligent but not wise—those for whom integrative learning has been incomplete. But this lovely story encourages me, anyway, to reclaim at least some of the superhero's powers for the integrative learning. The goal for integrative learning is not for students to become faster than a speeding bullet (they are already), or stronger than a locomotive (although gym fanatics might like it). With integrative learning, the goal is that students master intellectual arts that they can use throughout life for leaping over tall buildings, or better yet, reaching for the stars!

References

Cohen, Adam. An SAT Without Analogies is Like: (A) Confused Citizenry. *New York Times*, Sunday March 13, 2005, News of the Week in Review, p.10.

Ferris, Timothy. Seeing in the Dark. *The New Yorker*, Vol. 74, #23, August 10, 1998, pp. 54-61.

Huber, Mary Taylor, and Pat Hutchings. 2004. *Integrative Learning: Mapping the Terrain*. Association of American Colleges and Universities. .

http://www.carnegiefoundation.org/LiberalEducation/Mapping_Terrain.pdf