Course Anatomy: The Dissection and Analysis of Knowledge Through Teaching

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This volume is a contribution to the evolving scholarship of teaching. The course portfolio is a central element in the argument that teaching and scholarship are neither antithetical nor incompatible. Indeed, my argument is that every course is inherently an investigation, an experiment, a journey motivated by purpose and beset by uncertainty. A course, therefore, in its design, enactment, and analysis, is as much an act of inquiry and invention as any other activity more traditionally called "research" or the scholarship of discovery. Before launching into a detailed account of how a course can become an occasion for investigation and therefore a contribution to the scholarship of teaching, I must unpack and discuss both key terms of that phrase, *scholarship* and *teaching.* I shall begin this chapter with that discussion, then proceed to an account of the variety of ways in which the investigation of a course can proceed.

Scholarship and Teaching

For an activity to be designated as scholarship, it should manifest at least three key characteristics: It should be *public,* susceptible to *critical review and evaluation,* and accessible for *exchange and use* by other members of one's scholarly community. We thus observe, with respect to all forms of scholarship, that they are acts of mind or spirit that have been made public in some manner, have been subjected to peer review by members of one's intellectual or professional community, and can be cited, refuted, built upon, and shared among members of that community. Scholarship properly communicated and critiqued serves as the building block for knowledge growth in a field. These three characteristics are generally absent with respect to teaching. Teaching tends to be a private act (limited to a teacher and the particular students with whom the teaching is exchanged). Teaching is rarely evaluated by professional peers. And those who engage in innovative acts of teaching rarely build upon the work of others as they would in their more conventional scholarly work. When we portray those ways in which teaching can become scholarship through course portfolios, therefore, we seek approaches that render teaching public, critically evaluated, and useable by others in the community. What then do we mean by "teaching"? Too often teaching is identified only as the active interactions between teacher and students in a classroom setting (or even a tutorial session). I would argue that teaching, like other forms of scholarship, is an extended process that unfolds over time. It embodies at least five elements: *vision, design, interactions, outcomes,* and *analysis.*

"Writing the course portfolio on American Literary Traditions has given me an *opportunity to reflect seriously on two* semesters *of experimentation both in the context of my own professional development and* as a *contribution to the field of teaching American Literature.* "

RANDY BASS

Teaching begins with a vision of the possible or an experience of the problematic. The teacher holds a general view of how instruction might be improved, and/or senses that current instruction is unacceptable or a problem in some fashion. Vision leads to planning, the careful design of an instructional program or activity. A course design is much like the proposal for a program of research. The design can take the form of a course syllabus, a course outline or even an argument for the development of a course. Usually, the design will eventually take the form of a detailed sequence of teacher and student activities, including topics, readings, projects, assessments, exhibitions, competitions, or demonstrations. Design might also include the creation of course materials, such as slides, demonstrations, simulations, websites, laboratories, internships, and the like.

Once designed, teaching must be enacted. Like any other form of inquiry, the course does not end with its syllabus but must proceed to delivery, action, and interaction. The actual enactment of a course is equivalent to the processes of carrying out a piece of research that has been designed. It is often punctuated by unexpected and quite unpredictable developments. The enactment of teaching is complex and demanding. It demands technical skills such as lecturing, conducting discussions, engaging in Socratic questioning, monitoring individual or collaborative projects, assessing student learning both informally and formally, and making midcourse corrections as needed.

Like any other form of investigation, teaching has outcomes. The outcomes of teaching are acts and products of student learning. A course once designed and enacted must yield tangible outcomes, changes in students' skills, understanding, values, propensities, or sensibilities. An account of teaching without reference to learning is like a research report with no results. It lacks its most essential ingredient.

Finally, the extended act of teaching (now accompanied by learning) remains incomplete without analysis. Again, like a research report, we are not satisfied with the unexplicated report of results. We expect the investigator to propose a set of interpretations of the significance of the investigation relative to the vision that initiated the study. What does the work *mean?* How does it extend the community's understanding of important questions? How will we act differently in the future as a result of these experiences?

In sum, a scholarship of teaching will entail a public account of some or all of the full act of teaching—vision, design, enactment, outcomes, and analysis — in a manner susceptible to critical review by the teacher's professional peers, and amenable to productive employment in future work by members, of that same community. The course portfolio is a particularly fruitful example of the scholarship of teaching. And it is to a careful explication of the variety of ways in which a course portfolio might be organized, and to what ends, that I now turn.

Course Portfolios

Conversations about teaching and course portfolios often begin with questions about what goes in them. Those are natural, maybe even inevitable questions from the point of view of a faculty member first thinking about developing a portfolio. But to my mind, the harder questions one faces in developing the kind of systematic documentation and analysis of a course that many of us are

now calling a “course portfolio’ are not about how many dividers you need in an accordion folder. The hard questions are about how to represent and report the scholarship of teaching — assuming we believe teaching is indeed a legitimate form of scholarship — so that it can become part of the community's intellectual property; so that *it* can inform other members of the community, engage them in deep and significant conversations, provide a basis for the formation of communities of scholars, and be evaluated in that community.

The question I would therefore like to explore is, *What can one* ask *about a course in order to understand the ways in which its creation and conduct constitute a coordinated act of scholarship?*

Inventing a Genre

Note, first, that we take for granted the answers to the above question when it comes to the scholarship of discovery. That is, we have invented, in all of our fields, forms of display and communication called articles, monographs, performances, artistic creations, designs; and the like. Each field has *its* traditions and conventions about the questions you ask and the forms you use to display the fruits of scholarship for the evaluation and use of one's intellectual community. In reading dissertations, monographs, or articles in the natural and social sciences, for example, we have come to expect statements of the research problem, reviews of the relevant literature, and designs for the research, in that order, in the opening *sections* of the work. The expectation that we will encounter such sections serves as a template for the reader, not to mention a rubric for the referee or critic. Yet these are inventions, not revelations. They are conventions of the disciplines that have evolved over *time* to ease the communication of scholarship and its critical use. We do not need to read the raw data of lab notebooks, interview protocols, or historians' index cards. Each field has achieved an economy of inquiry and communication that compresses and transforms the processes of investigation.

Note too that these conventions did not appear spontaneously. They evolved slowly and painfully, over time, and they helped shape the scholarly communities in which they evolved. This process of inventing conventions for capturing and conveying knowledge *is* the process *in* which we're now engaged with regard to teaching. That's what the course portfolio (or whatever *it* ends up being called) is all about: It *is* an effort to invent a form of scholarly inquiry and communication through which we can represent and exchange the scholarship of teaching, thus rendering *it* community property. As one of the participants in AAHE.'s Peer Review of Teaching project observed, developing a course portfolio was, for him, like "trying to write a short story before the genre had been invented."

My argument here *is* that until we find ways of publicly displaying, examining. archiving, and referencing teaching as a form of scholarship and investiga*tion*, our pedagogical knowledge and know-how will never serve us as scholars in the ways our research does. The archival functions of research scaffold our frailties of memory, and we need something comparable for the scholarship of teaching.

Moreover, intellectual communities form around collections of text — or these days, probably hypertext. Communities are identified, that is, by their discourse; and it *is* in large part because faculty (and teachers at all levels) do not

have a shared language, a “discourse community,” that our practice is often so disconnected, so isolating. As I have observed elsewhere, the “community of scholars” is alive and well when we wear our hats as researchers and engage in the scholarship of discovery or of integration. But as teachers we experience pedagogical solitude, we are isolated and cut off from the other members of our professional teaching communities.

Investigations of the Course

So, what kinds of questions might be used to organize and give shape to the course portfolio? What questions can help form communities of conversation and practice? Not surprisingly, the answer depends on the purposes for which a course portfolio has been designed, and the audience of colleagues intended to review it. But I would propose four different formats and themes that might be useful frameworks for our course investigations and documentation: the course as *anatomical structure;* the *natural history of a* course; the *ecology* of courses; and courses as *investigations.* The first three correspond to three standard types of question that biologists ask about an organism: What are its parts, how do they form coherent structures, and how do they function to support adaptation and equilibrium? How does the organism develop over time, and how does it adapt to changes and unexpected factors over time? How does the organism fit into the larger contexts of which it is a part?

Course Anatomy

One kind of question you might ask derives from the anatomical or biological metaphor. Courses, like organisms, comprise a variety of parts and structures, each associated with particular functions; one thinks of tests, lectures, discussions, internships, projects, laboratories. All these are elements of typical courses; they are the parts that are intended to cumulate into a well-functioning, adaptive experience. And, as in a structure-function approach in physiology, we can ask how these individual structures begin to interact and combine into systems. How well do the various parts fit together, amplify one another's properties, and aggregate into an effective experience of learning? How well do the systems work? This, then, is a route into the anatomy of the course.

This is a useful route, I think, because in good courses the parts mesh beautifully into a clear, well-articulated set of experiences. Students sense that what they are reading, practicing, investigating, and having evaluated cohere into a meaningful structure. The readings frame the labs, the quizzes both test and review understanding. Large projects provide opportunities for integration and elaboration. In a well-crafted and well-conducted course, students experience an aesthetic sense of wholeness and coherence.

Conversely, courses that are unsuccessful are often those in which the pieces fail to add up. The goals of the course are incompatible with the assessments used to evaluate the quality of what is learned; the creativity of the exercises and experiences is a mismatch with the material covered in lectures. Such mismatches undermine the value that students place in all the components of the course and in the overall experience it entails. Moreover, it is likely that these discontinuities inhibit student understanding and motivation.

Natural History or Evolution

A second framework for a course portfolio is developmental or historical. We can, that is, ask about the way the course unfolds. What is its plot? What is its itinerary? What does it 1ook like as narrative or as a journey? Does it have a denouement, or does it just end with a dull thud? What kind of "course" does the course follow, and how effective is the course in tracking the thematic purposes of the teaching and the learning? It is worth remembering here that the first definition of *course* (in my third edition of *The American Heritage Dictionary)* is "onward movement in a particular direction"; and that *curriculum* (the-term we Americans use for a program of courses) comes from the Latin *currere,* meaning “to run,” the same root one finds for *current.*

The point here, as in the course anatomy framework, is to uncover a qualitative difference. Some courses read like a great short story, building up tension, creating problems, and then providing ways of trying to resolve these problems — though, as with most good pieces of fiction, not all of them get resolved. Other courses, however, resemble a low-budget tour of France, where “if this is Tuesday, it must be Chartres.” Topics and themes come tumbling one after the other, with little sense of logical necessity, narrative rationale, or cumulative sequence. It seems likely that the course whose plot or dramaturgy is well crafted will hold the attention of students more effectively and consolidate their learning more durably. Of course, the evidence *of* outcomes will be necessary to transform that conjecture into a warranted claim.

Another kind of unfolding over time occurs across multiple generations of the same course, rather than within any one particular offering. Thus, a portfolio can represent the *evolution* of the course as it adapts to the consequences of earlier experiences as well as to new situations. This form of course portfolio might also read like the report of a course investigation, discussed further below.

Course Ecology

A third possible framework for a course portfolio is ecological. If the first kind of portfolio examines the course cross-sectionally, and the second type takes a longitudinal or narrative view, the ecological perspective places an individual course within its programmatic or curricular context. The ecological examination of the course explores where it fits *in* the larger program, be it curriculum of the major or of the minor, or — what is perhaps more important for many of our areas — where it fits into the education of students who are neither majoring nor minoring in our areas but are taking the course as part of a liberal education. “Ecology” means looking at the individual course as part of a larger system of instruction and learning.

Gerald Graft and others have pointed out that academics do not often ask questions about how individual courses fit into a larger curricular context. Such questions run against the grain of our prevailing conceptions of faculty autonomy and academic freedom. Nevertheless, this perspective is crucial if we are to achieve any kind of instructional coherence at levels beyond that of the individual course. Rare indeed is the course that can accomplish profound educational outcomes without the help of other courses that precede and follow it. A most important rationale for employing fu1l-time faculty rather than

the growing use of part-timers lies in the claim that ful1-time faculty members create a coherent curricular context among their offerings. An ecological perspective is important, too, because it may help us get at ways to characterize the contribution of an individual faculty member's work to the larger aims of the department or program.

"By doing the portfolio I found myself in the position of being a *witness* to *my* own *classroom practice in* a *way I had not been before."*

DEBORAH LANGSAM

Course as Investigation.

Finally, we can approach the course as an investigation. The notion here is that every time we design or redesign a course, we are engaged in an experiment. The design of the course is in this regard a kind of working hypothesis; we teach the course hoping that what we intend is in fact what will transpire and knowing full well that it won't be. Note that this overturning of expectation is what experience is all about: Experience is what you have when what you expected doesn't happen. When what you expected *does* happen — you drive to the office in the morning without incident — you haven't had an experience, and that is mostly a blessing. Too many real experiences would be intolerable. But experience is a source of learning, to the extent that when one encounters discontinuities between expectation and reality, between intention and accomplishment, critical learning can take place. The course portfolio might usefully be seen as a vehicle for probing such discontinuities, extracting from them important experience-based learning for future practice.

Such a portfolio — the portfolio as investigation — would follow the model of a research paper, raising questions, testing outcomes against expectation, measuring achievement, and critically analyzing the course as one would any other experimental or clinical intervention. The portfolio might be presented as the report of an experiment. It might also take the form of a clinical or ethnographic case. This model of the course portfolio bears the closest resemblance to work in the scholarship of discovery. It allows us to ask what we now know that we didn't know before about the teaching of this area, and how we might redesign our teaching practice in the future.

The Course Portfolio as a Condition for Discovery

The four frameworks above will, I believe, be useful organizers for our investigations of our teaching and our courses. They certainly do not exhaust the possible formats for course portfolios. Moreover, they overlap, in the sense that we can present structural, developmental, evolutionary, and ecological portfolios as course investigations. But one issue arises quite apart from the argument for any particular framework. It is a familiar issue I confronted when, in 1995, I presented the report of Stanford University's Committee on the Evaluation and Improvement of Teaching, which I chaired, to the Academic Senate. One of my colleagues, a distinguished department chair in the sciences, and a personal friend, got up and said, "Lee, you know, this interest in investigating and documenting teaching is all well and good, and in some perfect universe it would be great to do all this stuff. But, you know, we've got research to do. It's bad enough that teaching already interrupts our research — now you want us to do research on our teaching. And this is just going to take too much time. It's going to interrupt the flow of the real work of the university."

I do not *dismiss* this objection, even by suggesting that it is limited to that

small fraction of our postsecondary institutions that are research intensive. I would like to address the question by referring to the research of UCLA anthropologist Eleanor Ochs. I heard Ochs describe her ethnographic studies of an international physics research group whose members were divided between Los Angeles and a university in France. I was struck by her account of what happens to this research group when its members have to prepare a presentation for the annual meeting of their disciplinary society, These meetings are very important for communicating one's work to the community, and for establishing the priority and importance of one's findings. Moreover, methods and findings must be displayed with great economy and precision, for there is an ironclad 10-minute time limit on each presentation. The investigators must interrupt the flow of their research routines and ask, What have we really learned that is important enough to pack into the allotted 10 minutes? How can we most vividly and persuasively display this work to our peers? Why must we stop what we are doing to tell others our story?

I'm sure you will recognize yourselves in this account. All working scholars are familiar with the frustration of having to interrupt important, work to write proposals or to craft reports for funding agents, site visitors, or present at an important professional meeting. Ochs documents how having to prepare a paper not only occludes the flow of this research group's discovery process; it also initiates a dramatically different level of analysis, reflection, critical examination, integration, and reinterpretation of the research that has been otherwise rolling along. Suddenly the investigators have to move their deliberations from the private to the public domain, from sheltered discourse to public *dis*course, from the hidden to the revealed. Their challenge is far greater than *sim*ply to figure out which slides to use and which transparencies to reproduce. The processes of the discovery *mode* give way to a more pedagogical perspec*tive*. They not only must understand what they have learned from their research. They must represent that understanding in ways that will make persuasive good sense to others. Researchers must now frame their questions m new ways, pose new challenges, and respond to new demands. The interruption of the workflow for these purposes creates a crucible in which making sense of the research gets tougher as it strives to become more meaningful.

I am a member of many visiting committees and advisory boards. I've long ago concluded that the justification for an advisory board or a visiting committee cannot rest on the wisdom of the advice we give. The value of the visiting committee is that it obligates the people being visited to prepare for the visit by stopping their work, stepping back, and asking what it all means and how best to teach what they know to others in their community. That interruption is critical. It leads to kinds of learning and reflection that would .be unlikely to occur under "normal" conditions. I have concluded that at two levels the occlusion or interruption of the processes of discovery is beneficial to the quality of scholarly discovery and integration. Similarly, the interruptions of typical teaching experiences that are engendered by the need to create course portfolios can have comparable benefits.

First, when I have to ask myself what I know that is worth teaching, and how I can simplify, reorganize, integrate, and represent what I know in ways that can be understood by others, that process — like the process of the scholar preparing for a paper at a national meeting — will loop back to shape and improve the teaching process itself. That is why faculty who develop course

portfolios so often report that the process of investigation, selection, and reflection entailed in writing the portfolio caused them to change the way they teach — to be more self-conscious about purposes, more vigilant about data collection, more thoughtful in assessing what works.

Second, having to take our teaching from the private to the public sphere, having to think about how we are going to engage in *it*, but also how we will come to understand what we are doing as teachers in ways that will permit us to organize what we do, display and communicate and converse about it to our own community, will have the same kind of improving effect for teaching that its parallel has for the improvement of the scholarship of discovery. Occluding the flow of either research or teaching leads to more serious reflection and analysis. These are the conditions for effective learning from these experiences.

It is too early to tell whether the forms of course portfolio I propose in this essay, or those that are presented elsewhere in this volume, prefigure the genres of scholarly discourse about teaching that will characterize the coming generation's efforts in this area. We appear to be entering an era in which teaching in higher education will be taken more seriously. The scholarship of teaching appears to hold significant promise as a vehicle for fundamentally changing the ways in which college and university educators view the chances for reconnecting the scholarships of discovery and of integration with the pursuit of scholarly teaching. But our attempts certainly represent legitimate movements in this direction, worthwhile experiments in the documentation and analysis of teaching.

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