

Teaching in a Digital Culture

What distinguishes genuine education from technical training? That question perplexes all of us, and the problem becomes acute when we're faced with students who reflect changes in the fundamental processes that have shaped our curricula, teaching, and assessment. What follows is an argument that we *first* articulate that nature of that cultural shift if new educational strategies are to succeed. Such an understanding precedes the formation of useful reviews, and what follows is a rough sketch of some key issue. Four key issues should shape the discussion of education in the new millennium:

1. Information vs. Knowledge: a cultural change in their relationship

- Education identifies the cultural forces that have shifted the focus of education.
- Information-as-knowledge yields to a strong focus on how “disciplinary discourse” selects, orders, and creates unstable knowledge out of information.
- The tension between old and new ideas about the nature of knowledge forms the context for curricula and pedagogy

2. Teaching the Discourse Rules

- Teachers use strategies that illustrate how disciplines ask questions that create specific kinds of knowledge.
- Curricula begin in the examination of the “hidden” questions that shape the kinds of answers that are possible.

3. Disciplinary Differences

- The common task all disciplines face when building knowledge
- The disciplinary differences in articulating illustrating each disciplines basic questions.

4. Constructing Disciplinary Behavior for Program Review

- Considerations for legitimate review and for measuring outcomes.

1. Information vs. Knowledge: a cultural change

Let's begin with a simple example drawn from my own experience: when I began as a Beckett scholar, the mass of such knowledge was small, identifiable, and relatively uncontested. There was not yet a specialty journal for Beckett studies, and even conferences were relatively few and far between. Materials were accessible in narrowly defined venues (libraries and archives) and relatively small in number. Thus – only twenty-five years ago – we could make a rather naïve

assumption: that information = knowledge. Obviously, I'm obscuring the fierce arguments that characterized so much of the scholarship, but my example here is to suggest that the difference between *information* and *knowledge* was nowhere near as problematic as it is today. Let me summarize:

When information is small and difficult to access, information and knowledge are easily *mistaken* as identical. Obstacles – technical, social, political, philosophical, and ideological – have fostered the identification of information and knowledge.

What makes the relation of information and knowledge the new center of education? I think it's obvious that the post-war is a culture of (among other things) rapid information flow. The Internet epitomizes the rapidity with which information changes hands, and what is now an inescapable fact of daily life is that information on any subject is vast and easily accessible. To return to my example, I now access the *Journal of Beckett Studies* online, I use J-store for other articles, I collaborate with the University of Michigan to put our own *Post Identity* into an online database, and I exchange graphic files that show Beckett's personal letters. Information now appears in a variety of digital media and is easily accessed. The contrast to 1972 when I began graduate school is immense, and part of that change is based in the opening of the Internet in 1973. Let me summarize:

When information is immense and easy to access, information and knowledge become distinctly different. The transformation of information into knowledge becomes obvious . . . and obviously a process that involves values, beliefs, and errors. The transformation of information into knowledge becomes the focus of education.

Education must reflect the shift away from a comfortable relation between language and reality. This change seems to have begun (the argument goes) with the Renaissance and culminated in the wars, confusion, and evils of the past 100 years. One way to think about the recent past is to see all this chaos as a struggle to find meaning and value in a world where "the real" seems to depend on a defective tool: language. In academic terms, the "real" became culturally situated, linguistically bound, and something constructed rather than revealed. Most of us in the liberal arts deal with this shift in our scholarship, scholarship that recognizes the "situatedness" of knowledge. To grotesquely simplify this shift in a paragraph would be embarrassing were it not for the need to raise the issue in relation to a pragmatic question: what will underlie education reform? My answer is fairly straightforward: effective education has to recognize how the

surrounding culture operates . . . if it hopes to preserve the past and invent the future. Here is a schematic for the context within which education now operates:

Information: nodes of order in an unordered field

- dynamic
- easily accessed
- vast

Disciplinary Discourse: a set of structuring filters applied to information

- Privileged phenomena
- Privileged problems
- Excluded phenomena
- Excluded problems
- Relational rules
- Sequences of abstraction levels
- Anomaly containment
- Excluded middles
- Narrative strategies
- Key practitioners
- Historical development
- Etceteras

Knowledge: the embodied consequence of disciplinary work

- Utility
- Value
- Re-entry into field of information

In a culture where knowledge continuously changes, the focus upon “disciplinary discourse” requires changes in curricula, teaching, and even the “metrics” that propose to measure the effectiveness of education. Educational reformers need to articulate their focus upon this middle

term and be evaluated in terms of how we use it to preserve historical achievements and invent new futures.

2. Teaching the Discourse Rules

The culture's strong sense that information and knowledge are different changes education. It requires a new sense of education's goals. A fundamental question is how our schools participate in the changes that characterize a culture where huge quantities of information are easily accessed. Technology – particularly information technologies – is crucial to this participation, but it's not the technology itself that matters. What matters is how technology helps students be good analysts of how this culture likes to transform information into knowledge . . . and especially to understand that such transformations always involve questions of belief, ethics, and morality.

Given this context, the “transmission” model of education is an absurdity; nobody accepts that there's neutral knowledge. Students, indeed the entire culture, recognize that information is selected, organized, privileged, and presented through highly specific interests. Some of these interests are economic, some intellectual, some historical, but all of them eventually demonstrate the fact that knowledge is never neutral, because knowledge always emerges out of the constellation of choices we impose on immense quantities of information. A culture that pervasively recognizes the distinction between information and knowledge expects that education will do far more than transmit one configuration of information to students. Teaching that attempts to “transmit” knowledge, will fail. Good teaching requires an emphasis on methodology, on the particular ways that the discipline “constructs” its knowledge by privileging some information, ignoring other data, by deploying crucial relational terms, and by creating hierarchies of causality and probability. Good education emphasizes the transformational processes themselves rather than a particular configuration of knowledge. Such education is the education of critique. And the education of critique is traditional liberal education . . . enhanced by the tools of digital culture. And it is here that traditionalists and contemporary forces join forces.

But the education of critique runs the risk of losing content, of losing the careful constructions of previous workers in the field. This risk rightfully agitates teachers, scholars, and anyone else who participates in the achievements that constitute our lives. How, then, does effective education serve to emphasize the disciplinary rules that transform information into knowledge and simultaneously convey the achievements – or consequences – of such disciplinary methods *without being emptied of content*? The answer lies in project-based learning because such learning is always embodied. It requires the social network of creators that sustains knowledge. It is, in-and-of itself, the performance of disciplinary methods to create an embodiment of the method, an embodiment that addresses a real world. Such learning is project based, and has three steps:

Learning by doing.

Learning by doing **real-world projects.**

Learning by doing real-world projects **for large public audiences.**

Such teaching forces students to make disciplinary choices, choices that frequently reflect ideological stances. But the use of projects emphasizes that ideas have consequences. To borrow the language of religion, it makes the learner “in” but not “of” the world. Electronic technologies – because they enable students and teachers to emphasize methodology as a constructive tool – enable education to participate in the culture of critique which has blossomed out of the rapid flows of information that characterize electronic culture. Our courses can perform such critique, and in doing so, educate students into the traditions of critique that have heretofore been reserved for the highest levels of education.

We face two seemingly contradictory tasks. One is to preserve established resources and strategies. The second is to adapt those strategies to the expanded opportunities created by electronic technologies. Coordinating these tasks requires a clear understanding of learning processes, teaching strategies, and the technologies that create congruencies between preservation and innovation. We emphasize that these technologies include the pre-existing print-based, classroom-based, teaching traditions of classroom education. A proven, widespread method that anticipated the potentials of electronic technology arose in Engineering schools and quickly spread across the curriculum. Termed Writing Across the Curriculum (WAC), this “technology” preserved proven methods of transmission, but also opens curricula and pedagogy

to the potentials of a focus on disciplinarity itself. When we recognize that teaching techniques, technologies, critique share a root – a *techne*’ – we can extend our traditions of critical thinking.

Our goal is to move students from their idiosyncratic expression to the standard discourse of a discipline. It does this by dividing writing into two types: writing to learn and writing to communicate. The first type includes notes, scribbles, diagrams, marginalia, tentative hypothesis, and other exploratory methods. The second includes papers, articles, Web sites, computer programming, and other types of writing that have an audience other than the writer. These two types of writing are obviously a continuum, and it is the job of good curricula and pedagogy is to provide a gradual series of activities that lead from one to the other. Effective teaching achieves this goal through projects that matter in the “real” world, projects visible to large audiences.

Project-based learning recognizes that genuine knowledge emerges out of concrete behaviors rather than through a top-down transmission of information. If such projects are real-world projects, students see that their education participates in a larger social context. When students know that their work will be visible to large public audiences, they perform at a higher level.

Finally, project-based learning reflects recent research into the nature of intelligence. Intelligence is now regarded as a set of distinct types that range from the verbal, the visual, to the mathematical, and other “types.” Online courses value these distinct modes – especially when they are project-based – because a broad range of such talent is required to produce the “product.” The visual intelligence can embody concepts in graphic design; the verbal intelligence can write text; the mathematical intelligence can provide coding and logical frames, etc. In short, the construction of knowledge is not just a theoretical position; it is performed in the deployment of the range of intelligence types that come through the door of any classroom. Because project-based learning is collaborative and often uses multi-media tools, it engages more learners.

3. Disciplinary Differences

The common task of educational programs, departments, and teachers is a double task: 1) “transmitting” established disciplinary knowledge, and 2) teaching the discipline’s methods and procedures. Some disciplines – for example mathematics – tend to use its lower-level courses

for “transmission” purposes. The nature of the discipline lends itself to this initial emphasis, and only later do students begin to take a meta-critical approach to their work. Assessment will be quite different for such disciplines than for a discipline such as English where the materials are more unruly; we can only initiate students into the discourse with a rapid introduction to the established methodologies that create meaning out of the works. Unlike mathematics, the English teacher emphasizes these methods at the very earliest stages of study. But both disciplines – mathematics and English – share the double task of transmitting established knowledge and exploring the disciplinary rules that create knowledge.

Are mathematics and English entirely distinct? Both face a large progress through the specifics of historical achievement, and both (soon or later) look at the larger processes by which they operate. But each begins that process in a different place. Our assessment needs to reflect these differences and to reflect the larger intellectual ground that both inhabit: the ground of a culture that understands the difference between information and information, and which finds the analysis of disciplinary practices the focus of critique.

4. Con-Structing Disciplinary Behavior for Program Review

Legitimate program review and legitimate assessment require that we take the time to articulate the nature of our disciplinary practices. Our assessments need to be more complex than the simple model offered by the current “metric.”

1. Assessments will begin with questions about the proportions of “transmission” and “critique” that are appropriate at each level of the various curricula;
2. Assessments will examine how – and when – each discipline addresses the various aspects of disciplinarity tentatively listed on page 3:
 - Privileged phenomena
 - Privileged problems
 - Excluded phenomena
 - Excluded problems
 - Relational rules
 - Sequences of abstraction levels
 - Anomaly containment
 - Excluded middles
 - Narrative strategies
 - Key practitioners
 - Historical development

3. Assessments will examine how *pedagogy* embodies both the “transmission” task and the “critique” tasks;
4. Assessments will examine how *curricula* facilitate both the “transmission” task and the “critique” tasks.

Can education change? A better question might be to ask how we can extend successful teaching strategies found in a variety of schools, especially those enable students to think expertly and produce expert work. These strategies – project-based learning, a dual emphasis on transmission and critique, differentiated tasks for different types of learners – become easier to extend with digital technologies that serve the strategies outlined above, but the question is not really about technology; it is about how we understand our culture, our job as educators, and how we understand the dual nature of teaching and learning: the transmission of achieved information and knowledge, and the cultivation of a sensibility that recognizes the cultural frameworks that both enable and limit knowledge.