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David Crusoe3

On the Teaching of Breadmaking

The teaching of breadmaking is, by my thought, a process which involves the transference a wide variety of both skills and knowledge. Foremost in my mind was the Teaching for Understanding model. (Wiske, 1998) In thinking about how the entire breadth of breadmaking skills might be represented in subsets of knowledge, which roughly correspond to the TFU rhetoric:

Foundational knowledge & experimentation: - What is yeast, how do I grow my sourdough yeast, and what makes it sour? (fermentation) - Why does bread rise?

Tactile understanding: - How does dough feel when the initial ingredients are mixed? - How does dough feel when it can adsorb more flour (requires more mixing) and when it's "full?" (time to knead) - What is proper kneading technique, and how does one know when the dough has been kneaded "enough?"

Rote knowledge: - What are the proper ingredient proportions; - How long do I knead; - How long does bread cook;

Goals:

With these questions in mind, I considered first how to answer these questions to a novice breadmaker. In order to assist the novice breadmaker in understanding, I laid out three goals: 1. That the student should observe the scientific process as well as the practical process, 2. That the student would engage in the experience and breadmaking, and 3. to document our exploration to provide future (visual) reference.

To meet the first goal, I E-Bay'd a Digital Blue digital microscope. I wondered: would this toy be helpful in teaching the science of breadmaking? Might it provide depth to the process? Alas, the answer to this question is "no," since yeast must be magnified ~650x in order to obtain a single-cell view, while the Digital Blue magnifies a maximum of 200x. Nonetheless, the experience reinforced the necessity to teach the student about how and why yeast works, and to find another (less technology-enhanced) manner with which to do so. Paper handouts replaced the microscope.

To meet the second goal, I first led Becca through creating the dough. She only needed slight supervision in this, as she had prior experience in breadmaking. Our expertise was best "put to the test" during kneading; we both had learned different ways to knead, although shared a common understanding of how to infer that the dough was kneaded "enough." (Interesting in its demonstration that different learners possess differing sets of knowledge that, though the meeting of differing objectives, lead to similar goals and similar methods to test if those goals are complete.)

To meet the final goal, I had decided to record the entire session on DV; unfortunately, this became untenable during the teaching session, as I had to choose between videotaping myself teaching, and teaching. This idea was quickly dropped.

Reflection

In representing a wide variety of skills to the already-adept learner, I found myself simply reinforcing knowledge, rather than laying foundations to take a learner's knowledge in a new direction. That Becca had experience with breadmaking made the process infinitely simpler. However, the challenge was, from the first, to develop a comprehensive model of how this process (including the skills and knowledge) could be taught. This model - and some of the coincidental thinking - is that provided above. Thus, in learning about teaching, I had to synthesize all the internal knowledge - essentially expertise - into a useable, understandable format. For me, it was hardest to explicitly state something that had become so internalized that, instead of procedures, the skills were really a second nature. Note: for those who are read this and are interested to learn

[Hei-Jung: Hi Dave, I would be interested to learn how to knead and tell when the dough is ready], please contact me - I'd be happy to try this out again with a novice learner, as the process might be even more illuminating, both of my own expertise and understanding, and to the learner, of how to learn a very new and different set of skills and knowledge.

Dis/Un[covering] Urban

Susanne's "urban exploration" was, for me, a demonstration of how closely various domains of knowledge are linked. In choosing this project, I expected to learn how I might "read" the various features of an urban area to interpret its history, pervasive culture and current environment. In reality, I may have expected quite a condensation of knowledge into a very, very short time. Nonetheless, the experience was invaluable in that it provided a framework for understanding how social and political climates act upon, and are acted upon, urban development.

Quite simply, the experience was a walk through Boston, from the MIT main campus, over the bridge, to Newberry street, through the central gardens, to Beacon Hill, and onward to Quincy Market. Along the way, Susanne urged me to explain what I did and did not notice; this in itself is a wonderful skill. With respect to our assignment, she explained why and how buildings were designed the way they were; how modernization might change things, how to recognize newer structures from older, and how a community might be structured around an open, common "intimate" space.

During our walk, my attention wavered between exploring the Urban and considering the digital. For example, I wondered how Urban planning might actually be much like planning in digital space; I wonder if, for example, digital space confines to the same cultural rules that we create in our live environments. Additionally, I wonder if urban environments can be expressed in simple (well, very complex) rules, much as the rules we create within our digital spaces. Are our digital spaces really just microcosms of our environmental spaces, and what might we learn from exploring those similarities or differences?

The readings that Susanne provided me are wonderful. Rivkin's article, for example, describes an experiment in which participants travel around a city block while describing to the research their observations. In retrospect, this might have been an interesting task; [Susanne: I was thinking about that idea! May-be it would be fun to try this exercise again sometime in another neighborhood. And I'm super-interested in the idea of overlapping models for knowledge, a real challenge.] however, I realize that there's nothing to keep me from doing this now, and asking myself questions all the while: what's important, what's the organization of the area, what am I missing, and why?