Folsom Community College Faculty Convocation

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Teaching Problems

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Introduction

Thank you for inviting me to speak to you today. Your invitation is a great honor. I hope what I bring to you today sufficiently honors your intellects and professional passions and you consider this time well-spent as you prepare for the start of a new academic year.

As you can see I will not be using PowerPoint—I want you to listen to me and I invite you to take notes on what you hear. Near the end, I'll give you a couple minutes to compare notes with colleagues to make sure you got them right. That should provoke some questions to which I'll respond before we end the session.

I've chosen the title, **Teaching Problems**, because it unmasks one of the key challenges we all face in the classroom—making sense to students. Making sense of any sort of communication between people is a wondrous thing. It is so complicated and there are so many possible points of potential miscues that I am often amazed that we can communicate with each other at all. I'll bet that there are even different interpretations of the two word title of my talk.

Some of you may have interpreted the title as a lament about the difficulties of teaching; you may have understood my talk, potentially, *as an emotional response* to our concerns about the difficulties we face in the classroom. This would have primed you for a discussion that provided some affective release, or comfort.

Others of you may have interpreted the title similarly, but *denotatively rather than connotatively*. That is, you may have construed the meaning of the title as an exploration of the practical issues in dealing with such things as overcrowded classrooms, insufficient program funding and resources, student preparation and the like. Some hear the title as *"the problems of teaching."*

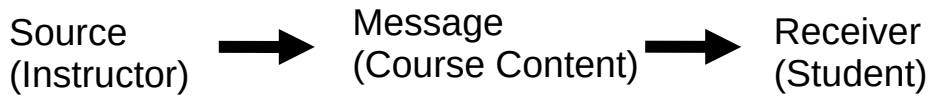
Others of you may have interpreted the title somewhat differently, putting emphasis on the first word, "TEACHING problems," as in *"the teaching of problems" or "using problems to teach."* This interpretation would have you looking for an outline of a specific pedagogical approach or device which is a substantially different understanding of the title compared to the ones I suggested earlier.

That's quite a bit of ambiguity packed into two words, or four syllables! All are reasonable interpretations and expectations, but not quite what I mean. Imagine what happens when we talk about complex ideas or processes for 30 or 40 minutes or longer? *(And this assumes some ideal conditions wherein everyone is equally engaged with the lesson; everyone speaks English at essentially your level of competence, etc.)* What sorts of problems of meaning are embedded in those sessions?

We can't avoid all confusion or misinterpretation because language must be loose-fitting enough to accommodate the new and different experiences and conditions that are central to human existence and learning. Learning is messy and the communication tools of language and nonverbal signals operating within different media can exacerbate the mess. But, that messiness can be limited or controlled, even *used*, if we properly understand the situation we face. In order to do that, and get to the practical application of our explorations, first, I want to discuss a *theory of communication* and second, *a theory of problem* since they are related, as in "teaching problems." As Kurt Lewin (1951) said, there is nothing more practical than a good theory.

A Theory of Communication

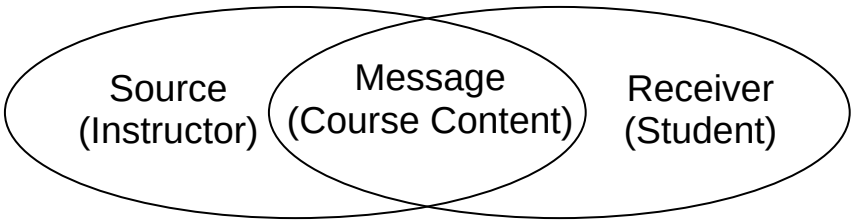
Our talk often reveals the "theories-in-use" (Argyris & Schon) that guide our everyday behavior. As I work with instructors, the most common metaphor for teaching that I hear is "covering the material." (I always imagine a house painter covering the walls of my house with a paint roller.) The language of the college environment constantly reinforces the metaphor through the use of words such as "lecture" to describe teaching (the term is even embedded in our bureaucratic language as in "lecture sections"). This theory-in-use is one that assumes teaching is information transfer. It can be pictured like this:



However, *teaching* does not equal transferring information to students because that cannot happen in any transformative way. Even though words such as "lecture" and "presentation" suggest direct information transfer, such an effect is not really possible. While we are well-intentioned when we say we need to "cover material" and students need to "retain" it, *real teaching entails complex social dynamics that facilitate students attributing certain **meanings** rather than others to the ideas or experiences they encounter with us*. That is, students learn when they assign or re-assign meanings to experiences in new ways, not when they merely retain their original meanings. We can retain information in short-term, even long-term memory which will have no effect on our understanding of our experiences whatsoever. Learning is marked by students modifying their beliefs, modifying their understandings of information or concepts, or modifying their behaviors in ways that increase their own capacity to get on in the world. That comes when new meanings are found for their observations and experiences.

Acting as if we simply can convey some body of content to students often leads to frustration for both instructors and students because it seems that one or the other has "failed" in performing assigned roles. As instructors, we blame ourselves for unclear presentation or we blame students as lazy, dull, distracted, or overburdened. However, there is another way of looking at teaching.

I think a different communication perspective on teaching and learning will help you recreate the meaning of "teaching" and "learning" in ways that invigorate your work in your classroom. Instead of the metaphor of "covering" content, I suggest we try the metaphor of "dialogue" It can be pictured like this:



This model connects instructor and students in the process of jointly creating meaning. While the model may not look greatly different from the first, it is a quantum leap from it when instructors use it as their theory-in-use.

The most important characteristic of this model is the lessening of the *roles* that separate "source/instructor" and "receiver/student." Rather than feature the jobs and responsibilities of each separately, this model sets both actors on the task of negotiating the meaning of the message. (Cronen, Pearce and Changsheng, 1989/90). The metaphor shifts from transfer to *dialogue*. (Linell, 2001). The effect this perspective has on how teachers communicate with students can be profound because both are involved in making sense of information—presenting it, questioning it, asking for clarification from each other and trying to work out what any particular content means. Sometimes this is easy (and when it is, it feels like the transfer model we discussed earlier), and other times it is a struggle. Even so, we must keep in mind that we *construct meanings* of messages within specific situations or contexts. This is the nature of communication. Classroom communication does not exist apart from this purpose. Our choice of "theory-in-use" matters if we are going to understand instruction in a way that facilitates substantial learning about and long-term improvement of teaching. This is our greatest teaching problem.

Just as a theory of communication is helpful in understanding the process of making meaning, a theory of a problem can be useful as well. To get on with our exploration of teaching problems, let's work on the problem of problems.

A theory of a problem

One definition of problem, drawn from Dewey, defines a problem as *a systemic malfunction* (Young). This understanding of problem *as situation* automatically includes context and invites meaning making. (Without context, things are meaningless.) So, if we approach problems from a systems view, we gain some helpful tools: context being the first, and significance of the problem being the second.

A complementary definition characterizes a problem as *conditions needing a solution and the solution is somehow constrained* (Nickles, p.109). This definition keeps the idea of *situation* (conditions) and adds the necessity of *constraint*. This is important because constraint makes a problem a problem. Here's what I mean: as Star Trek progressed as narrative, the transporters got better and better. Originally, transporters were unstable, dangerous, required great amounts of energy and were relatively slow. You remember the swirling lights and the time it took to deconstruct and reconstruct just a few people. These constraints made a problem for the crew when they needed this tool in an emergency. However, as the series went along, the transporters became capable of transporting entire starships in an instant. At that point, I was bored—the solution to the crew's problems now has no limits, so they really didn't have many real problems

anymore. Just fire up the transporter! Limits are central to problems by definition and in practice.

These definitions frame the concept of problem more broadly than as often the case in classrooms. We often assign "problems" to students that are really just tasks or puzzles to exercise specific skills. We already know the answers and the students are to figure out the answers. These are really *phantom problems* (Nickles, p. 95) because there are no real constrains on solutions. Such activities serve the valuable function of skill practice, but they are *decontextualized* and therefore *meaning-less*. I can honestly say I do not remember a single math problem I ever solved for homework. My calculation skills, I'm sure, improved, but I didn't learn anything about math from them. I was merely doing calculations to which the answers were already known to my instructors. The solutions were meaningless in and of themselves. Let me be clear— using phantom problems to reinforce skills and recall of correct processes, etc. is valuable for limited purposes. But we shouldn't confuse that with the potential for knowledge transformation that accrues when teacher and students confront relevant systemic malfunctions demanding solutions which are regularly or irregularly constrained.

So, what practical use can we make of our theory of communication as dialogue and our theory of problem as systemic malfunction?

Shuell argues that "learning is an active, goal-oriented, cumulative process in which the learner plays a critical role" (p. 104). He suggests six requirements for transformative teaching that uses real problems to make content meaningful:

Being aware of the problem: As we learned earlier, different people understand things differently. In order to deal with systemic problems, everyone involved needs to perceive a significant problem in similar ways.

Understanding the problem: Students value knowing what you understand to be the learning problem and you benefit by knowing how they understand it or not. Also, negotiating understanding of the problem can cut out needless work which students certainly value; properly understanding the problem is central to proper learning for students.

Mining prior knowledge: The value of using problems to teach is that they require students to use their existing knowledge. Terminology, facts, formulae, etc. get used in context and for purpose and therefore become meaningful.

Using problem-solving strategies: Problems encourage systematic search for needed information; identifying and evaluating alternative solutions; use of domain-specific strategies which move them toward expertise.

Managing time: Significant problems require time to solve. Thinking, discussion, research, analysis, solution trials and reflection take time which needs to be properly allocated and used.

Reflecting on the strategies used and solutions created: Everyone should engage in post hoc analysis of the solution as well as their individual and corporate use of domain-specific knowledge and skills.

Conclusion

When I have to deal with a meaningful, important problem, I get on it—I'm engaged, energized, connected to it and other people involved in the situation. When I embrace teaching problems in the classroom, it becomes a place of learning that is more appropriately contextualized and meaningful—it is more about life and less about schooling. Embracing the problems of teaching and the problems of our content areas gives us and our students a helpful window on our lives in our communities. It is a humane approach to teaching and learning. In Dewey's words:

> The instructor ceases and the teacher begins at the point where communicated matter stimulates into fuller and more significant life that which has entered by the strait and narrow gate of sense-perception and motor activity. *Genuine communication involves contagion; its name should not be taken in vain by terming communication that which produces no community of thought and purpose* between the [student] and the race of which [the student] is heir.(p. 24, emphasis added)

References

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"Teaching Problems"
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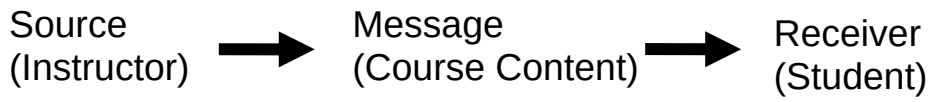
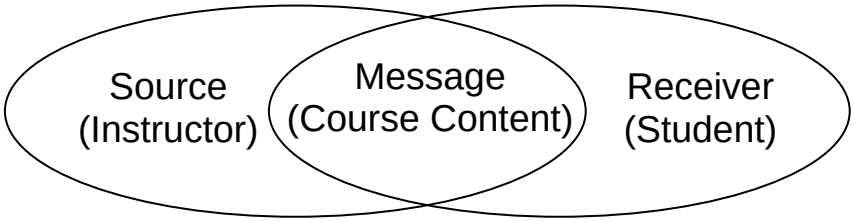
The phrase "Teaching problems," can be interpreted in numerous ways:

A common "theory-in-use" of how teachers communicate with students:



A better "theory-in-use" of how teachers and students make sense of their experience:



Problem defined:

- *a systemic malfunction* (Young).
- as *conditions needing solution and the possible solution/s is/are somehow constrained* (Nickles)

Six Elements of Problem:
Being Aware of the Problem.

Understanding the problem

Mining prior knowledge

Using problem-solving strategies

Managing time

Reflecting on the strategies used and solutions created

In the words of John Dewey:
"The instructor ceases and the teacher begins at the point where communicated matter stimulates into fuller and more significant life that which has entered by the strait and narrow gate of sense-perception and motor activity. *Genuine communication involves contagion; its name should not be taken in vain by terming communication that which produces no community of thought and purpose* between the [student] and the race of which [the student] is heir." (p. 24, emphasis added)

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