

# The National Teaching & Learning FORUM

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## Radical Course Revision: A Case Study

*Julie C. Stout  
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Like many of my faculty colleagues, I continually revise my courses and try new schemes to move students up the ladder toward greater self-motivation and more complex thinking. The results, however, have always been uneven. Even when I felt that a class went well, it still seemed as though student performance on exams fell short of my expectations, and their sometimes indifferent comments on course evaluations were discouraging.

This past year I decided to adopt a new strategy. Instead of working through trial-and-error, tinkering with the edges of my teaching, I determined to overhaul it. The time had come for rigorous, critical reflection on my teaching, the same kind of systematic critical reflection that I apply to my research.

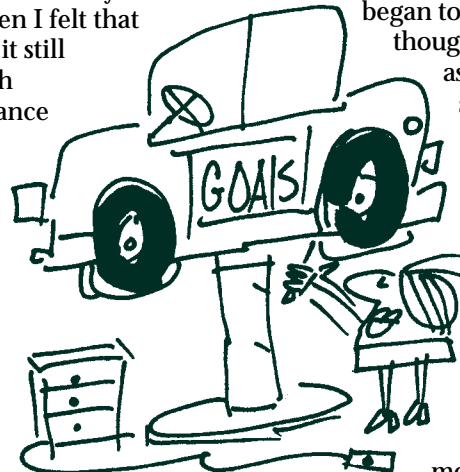
### Getting a Different Perspective

Just as I show my research to colleagues for review, suggestion,

and comment, I wanted to get outside myself in this review. After all, I'd been reflecting and tinkering alone for a long time. It seemed time to seek other perspectives on what I was doing. To that end, I made an appointment with a consultant at the Teaching Resources Center (TRC) who helped me interpret my course evaluations. For the first time I

began to realize that, although many of my assignments (case studies, discussions, projects, group assignments) were already based on "active learning" principles, they were, nevertheless, ineffective because they did not connect to the students' views of what mattered

most. It was clear that the students did not perceive how the activities of the course were supposed to help them learn the material and prepare for exams. No wonder, then, that student performance on tests and other graded assignments was disappointing. For them, class discussions and projects were disconnected from their idea of what was important, and consequently, from their study strategies and test preparation as well.



## Rebuilding from the Ground Up

The TRC consultant guided the early stages of the process by asking me the obvious question: *What do you want students to learn?* This was easy: neuropsychology, of course—how brain organization serves as a footprint for behavior, how brain damage is reflected in behavior, how . . . well, you get the idea.

The next question puzzled me: *What should students be able to do with that information when they finish the course?* At first I thought this was really the same as the first question. Doesn't learning the information include using it? But as I began to talk about what students might do with the information, it became clear to me that, in fact, I had been wanting students to develop a lot of specific skills along with their knowledge, but I had not been making these aims explicit.

This was a key part of the overhauling process. In order to better connect the course content with the course activities and student concerns, I had to articulate clearly for myself and for my students exactly what neuropsychologists do—even those things that occur so habitually that they are unconscious, such as:

- observing behavior closely and reporting it accurately;
- distinguishing between behavioral data and inferences or interpretations;
- developing hypotheses as to the causes of certain behavior in an individual;
- testing hypotheses by doing relevant research, data collection, and analysis; and
- responding critically to how clinical neuroscience is used and represented in the popular media.

In short, I wanted my students to begin building some of the skills and strategies used by professionals who depended on neuropsychology in their everyday work.

## Rethinking Course Design

In the past I had often lectured on neuropsychological concepts

and research findings and then asked students to apply them to cases and data. The unintended result was that the students often saw the cases and data as just more content to memorize, not as an opportunity to think for themselves.

My TRC consultant insisted on this point: If my students were to develop the skills I wanted them to learn, I would have to create *experiences* for them where the targeted skills had real value as tools, not just as academic abstractions. This meant staging opportunities for students to

- observe and “discover” something (even though it might not be new to me);
- construct concepts from their own observations (even though these have already been constructed by neuropsychologists); and
- analyze data as though their interpretations and conclusions led to real clinical consequences.

To do this, I adapted an approach from basic learning theory and its application in behavior therapies.

## Adapting Principles from Behavioral Psychology

This experiential approach follows these steps: (1) modeling of the desired behavior or skill; (2) allowing the student to try to perform the task while providing constructive feedback; and finally, (3) providing varied opportunities for rehearsal of the newly formed skill. Rehearsal of the new skill not only solidifies the newly acquired knowledge, but provides opportunities for substantiating the knowledge by gradually increasing the difficulty of a task demand and widening the scope of the demands to analogous situations. Usually, accuracy requirements are also gradually increased throughout the process.

I told the students I would show them how to do the task by doing it myself first, and then give them opportunities to try it. In practice, my modeling of the process was usually followed by a group effort to perform the process on an analo-

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## Editor's Note:

Every spring the University of Wisconsin System sponsors a conference on teaching and learning. Faculty from all over the state gather to compare notes and talk with invited guests about their common calling. Organized by the Office of Professional and Instructional Development (OPID), it's always a good conference. This year it was especially good. This year OPID invited ten faculty from all over the country who've participated in the Carnegie Scholars program, as well as Pat Hutchings, senior scholar at Carnegie, for the keynote. What made the conference excellent had little to do with name recognition or any aura of prestige; rather, it derived from a solid recognition of common ground and the real possibilities of progress in the endless challenge of teaching better. Uniformly, the Carnegie Scholars were humble and enthusiastic about what they'd been doing and what they'd learned about themselves and teaching. Uniformly, it was the value and interest of the questions about teaching and learning that held center stage.

Pat Hutchings' keynote, "From Seat of the Pants to the Shoulders of Giants: Advancing the Practice and Profession of Teaching," foreshadowed this focus. In it she quickly spelled out what the endlessly debated "scholarship of teaching" is not—not new, not just to improve one's own teaching, not dependent on a single method, not a publications engine, and not all figured out. The scholarship of teaching begins with questions, and (modeling good pedagogy) Hutchings tossed them to the audience and suggested they talk with their neighbors about them. The first questions were, "What aspect of your students' learning do you puzzle over, wish you knew more about, worry about?" and "Why is your question important?" After pausing for us to think and talk about those, she offered two more: "What kinds of evidence would you need to answer your questions?" and "What strategies could you use to get that evidence?" From that point on, this was a working conference, a conversation, a forum.

Good questions form the theme of this issue of the *Forum*. From **Linc. Fisch's** AD REM . . . column which bears the name, to **Julie Stout's** report on how she completely overhauled her course in neuropsychology, questions well asked form the spine of this issue. "How can I get students to come to class prepared so that we can have good discussions?" **Nancy Barrineau** asks. And for her an answer lies in summary note cards. "How ought we to look at ourselves as teachers today?" asks **Virginia Lee**. "How has the shifting conceptualization of the teacher reflected our deepening understanding of teaching and learning?"

"What is the core issue, the big stumbling block between enthusiasm, passion, mastery of one's subject and great teaching?" is the question **Craig Nelson** takes up in his CARNEGIE CHRONICLE.

All these good questions compel me to pose one of my own: "Why are good questions almost always more interesting than eloquent or correct answers?" My answer is that they leave a place for me; they welcome me into the journey. They assure me that I am not left out, that my interest in the question, my recognition of it as a good question, already proves me worthy and makes me part of the inquiry. I am not carrying someone else's shoes. I am a colleague in an enterprise that's much bigger and more important than all of us. Good questions humble and exalt simultaneously. In the best possible way, they help us know our place.

And so, for the summer and the year to come, I wish us all "good questions."

—James Rhem

gous problem, then by my feedback, and finally by an evaluation component in which they received a new problem to work on independently. This latter step required students to adapt the new skills and apply them effectively to solve the new problem. I applied this pedagogical sequence to several skill goals for the course, including analyzing patient data in terms of two opposing theories, reading and understanding media reports containing neuropsychological studies (e.g., the Einstein brain reports in the summer of 1999), and making "real life" treatment decisions, both from the professional and the patient viewpoints.

In general, this gave students opportunities for obtaining personal experience in taking the lead in observing initially unstructured information such as a patient videotape, in applying analytical methods to the raw data, and in thinking through possible hypotheses *before* moving toward judgment, interpretations, and formal theorizing.

## My Steps toward Success

### 1. Building a New Syllabus

Having altered my approach in order to connect theory and skills into habits of mind (which I hoped would lead to what we think of as mastery of the material), I needed to build a syllabus that could target skill development and still cover "the content." In my new syllabus, I laid out not only the content goals of the course, but also the "professional skills" the course would target. I planned on four major units, and came up with the essential information in each with which I wanted students to leave the course. I then worked backward from "knowledge goals" to formulate day-to-day plans for the class meetings. I matched each goal with specific professional skills and related activities and assignments that would allow students to put the content to use. In any given content unit therefore, students might be making clinical observations, analyzing data, developing hypoth-

eses, reading background information from the text, and developing questions and plans that guided further research and inquiry.

## 2. Connecting Evaluation and Grading to the Course Goals

In this new course I wanted the evaluation and grading of student work to serve as useful feedback for students who were motivated to improve, rather than as final (perhaps demoralizing) declarations of how far short they might have fallen—as is often the case in traditional testing and grading. This meant that evaluation of student performance and mastery would have to be frequent and varied, so that students could get enough feedback to reflect, rethink, and improve as the course went along.

I settled on short, focused quizzes to check comprehension of essential content and a few larger tests to check broader comprehension. These accounted for roughly half the grade. For the other half I used numerous writing assignments—in the form of clinical reports, data interpretations, and formal arguments—for measuring development of the professional skills.

## 3. Setting the Tone

Now that I was clear to myself about the goals for the course, I wanted to get the students to buy into my scheme. I began on the first day of class by giving them a few frightening statistics about Alzheimer's disease, the aging population, the high incidence of brain injury, and its devastating consequences. I explained that they (my students) were the first generation that would be trained intensively from the start to be at the junction between behavioral and neural sciences; it would be their generation that would make a difference for these problems of enormous social consequence. I

told them I wanted them to rise to the occasion and take this on, and that I had every confidence in their ability to do so. In this course, I explained, they would be building professional skills in the field of neuropsychology in order to meet the challenge. We worked through the list of skills outlined on the syllabus to clarify for them what they would need to do.

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There was one difference—every student in this section could articulate the difficult questions in more rational and thoughtful ways.

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## 4. Providing a Safety Net Observations on outcomes

I've taught the course only once since its transformation, so the data are limited. Perhaps this group of students was more gifted and dedicated than others that pass through my courses. They seemed pretty representative to me. Their response to my course, however, gave me a happy surprise. Here are six primary outcomes that signal a shift from my earlier courses:

**Attendance for the course was very high, and consistently so.** Most days either all students were present or only one was absent, and rarely the same one.

**Without exception, every student in the course performed at the top of the class for at least one assignment.** I interpreted this as an indication that every student was highly engaged for at least some of the class.

**Students consistently surpassed my expectations for what they could achieve.** While I have heard many hallway discussions of how disappointing the academic performance of our students is, I rarely hear about the ones that excel beyond our goals. In this class the high

quality of the student work kept me amazed throughout the semester.

**The coverage of material was high, and at least comparable to my earlier version of the course, which was almost all coverage.** There was one difference, however: Every student in this section could articulate the more difficult questions and controversies in more rational and thoughtful ways. Some of the details were lost, but this must be a trade-off for the progress made on other fronts. It's a question I will try to address in future versions of the course.

**Student evaluations were strikingly more positive than in the past.** As I read the student evaluations for this section, I saw not only improvement in student attitudes about my teaching, but consistent high marks in areas that were sometimes weak before. I am particularly pleased that all the students found the course interesting, that they thought they "learned a lot," and that they were able to say that they were now "able to solve actual problems in this field." One of my students wrote on her course evaluation: "This course met every expectation I had and more. I cannot recall another class where I learned as much and actually enjoyed the material as much."

**I had fun.** This was probably the first time in my teaching career where I looked forward to every class. Each meeting was exciting because students were genuinely and actively solving problems in the world of neuropsychology, and I became a valuable resource for them as they struggled to learn. Our conversations were real because we were dealing with real professional questions and situations.

## The Future

Teaching this way was not easier than the lecture-test approach, but given the many benefits, it was worth it. It does take more time, but not a lot more. In any case, I would now find it very difficult to go back to what I was doing before, because the experience has given me optimism about what I can accomplish in the classroom. Most

importantly, it has caused me to raise my expectations for our undergraduates.

I now face a twofold personal challenge: 1) to begin adopting these same principles of teaching and learning in all my classes, for students at all levels; and 2) to carefully document what happens, so that I can build scholarship out of my classroom research. But for now, the most important outcome is the feeling I have that I know how to direct my efforts in teaching. Unlike earlier semesters, the cost of teaching, both in terms of time and energy, is well-balanced with the benefits to me and to my students. ■■■

*Thanks to William Roberson, now at University of Texas, El Paso, for help in rethinking my course and reporting on the experience.*

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## Submit

I encourage subscribers to consider writing for the *Forum*. Faculty everywhere now feel the importance of a renewed inquiry into teaching, and increasingly they recognize that insights from one discipline have cross-disciplinary implications.

Submissions should not exceed 1500 words, and should be shorter whenever possible.

Remember, too, that with the synergy between the printed newsletter and its Web site, we have room for more elaborate presentations, a repository for supplementary material to expand the compact pieces printed here.

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