

**Essays from**  
**E-xcellence**  
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## Introduction to Volumes I – IV

The Society for the Teaching of Psychology (STP, Division 2 of the American Psychological Association) launched its Internet electronic discussion list, PsychTeacher™, in late 1998. In the spring of 2000, *E-xcellence in Teaching*, a monthly column devoted to the teaching of psychology, joined the list. The column features monthly essays devoted to teaching at the high school, community college, and university levels in general, and to the teaching of psychology in particular. The essays take the form of lessons learned, advice and hints on particular aspects of teaching, lore regarding teaching, book reviews, and reflections on our roles as teachers of psychology. In general, though, the primary focus of the column is to provide a forum for the discussion and promotion of effective teaching practices.

This compilation of essays forms Volume IV of *E-xcellence in Teaching*. The first volume, which appeared on STP's Web site in 2002, contains the first 20 *E-xcellence in Teaching* essays, which were posted on the list in 2000-2001; Volume II contains 13 essays from 2002; and Volume III contains 12 essays posted in 2003. The present volume of *E-xcellence in Teaching* is comprised of 12 essays that appeared on the list in 2004. We would like to thank the authors of these 57 essays for their valuable contributions to the column and to the literature on the teaching of psychology and the scholarship on teaching. We would also like to thank the STP leadership for their continued support of *E-xcellence in Teaching*.

Volume I was dedicated to Jane Halonen (University of West Florida) for the important role she played in establishing *E-xcellence in Teaching*, and Volume II was dedicated to Randy Smith (Kennesaw State University) for his consistent and unwavering championing of the scholarship of teaching in his role as editor of *Teaching of Psychology*. Bill Buskist (Auburn University), past editor of *E-xcellence in Teaching*, dedicated Volume III to Bill Hill (Kennesaw State University) and Vinny Hevern (Le Moyne College), both of whom played pivotal roles in the creation, development, and continued success of the column. As the current co-editors of *E-xcellence in Teaching*, Bryan Saville and Tracy Zinn would like to dedicate Volume IV to Bill Buskist for his continual guidance, support, and friendship over the past 2 years.

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***General Psychology Laboratories***

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column on the *PsychTeacher Electronic Discussion List* for January 2004.)

Psychology as a natural science was born in the laboratory, and the laboratory is the core of its being. Although William James (1892) wrote a plea for psychology as a natural science, it was through college and university laboratories at the turn of the 20th century that psychology established itself as a natural science (Benjamin, 2000). In 1903, Titchener wrote, “psychological instruction centers in the laboratory” as it does “in elementary physics or elementary zoology” (p. 175). By the 1920s, Kline and Kline (1927) asserted, “this position... will readily be admitted by all psychologists” (p. vii), Foster (1923) had developed a course with 90 hours allotted for laboratory work, and the psychological laboratory was on the rise in America (Fuchs & Milar, 2003).

As we enter the 21st century, however, the laboratory holds a small place in the psychology curriculum. A psychology major typically garners little laboratory experience (Perlman & McCann, 1999), and an analysis of 500 introductory courses across the United States (Perlman & McCann, 1999) revealed that only 5% of these courses included a laboratory component. In response, there have been urgent calls for faculty to teach the scientific method (McGovern & Reich, 1996; Miller, 1992; Sternberg, 1999); and Berthold, Hakala, and Goff (2003) argued that the laboratory, considered integral to the discipline, should once again become the norm, not the exception.

For over 30 years, the College of St. Catherine and St. Olaf College have had laboratories in their psychology curricula. This report describes our parallel efforts to develop investigative laboratories beginning at the introductory level.

***The College of St. Catherine Experience***

St. Catherine, which has included a hands-on laboratory component in General Psychology since the 1970s, set out in 2001, with the help of a National Science Foundation (NSF) grant, to move away from canned studies and extend the scope of its offerings. We moved from providing a taste of psychological research to offering opportunities for direct scientific inquiry, expanding laboratories to a full semester and including greater depth and breadth of coverage.

The purpose of the General Psychology laboratory at St. Catherine is to enhance learning by affording opportunities for scientific inquiry, providing students with firsthand experience of different research methods, and helping students develop their research skills. Students meet with their lab group (12-16 students) and lab instructor once each week for an hour. Lab instructors, who are paid and typically serve for two semesters, are upper-division psychology majors or minors.

The current version of the lab experience includes five discrete labs and is the result of highly collaborative work by all faculty members in the department. Each of the labs focuses on a different component or type of research method: (a) literature review, (b) observation, (c) experiment, (d) correlational research, or (e) archival research. In addition, each lab is tied to class lectures and to specific assigned readings from “Forty Studies that Changed Psychology” (Hock, 2002). For example, students conduct a structured observation of children’s exploratory behavior in lab, cover developmental psychology in class, and read about a study by Piaget.

Lab 1 is a literature review based on a student-chosen topic related to gender or culture. Students learn how to use PsycINFO and work with lab partners to conduct literature searches.

Lab 2 is a structured observation based on developmental psychology, specifically children’s curiosity. Students observe a videotape of six different children playing individually with Banta’s Curiosity Box. They learn how to gather and record observational data, distinguish observations from inferences, and analyze the data.

Lab 3 is an experiment on memory. Students design an experiment using software developed at St. Catherine and conduct their experiment with students from other lab sections. They learn how to design an experiment, analyze data, and draw conclusions about phenomena such as the serial position effect, false memory, and isolation effects in free recall.

Lab 4 uses the correlational method and examines the relationships between stress, personality, and health. Students use computer software to gather heart rate data under baseline and “mild stressor” conditions. They also complete surveys about life stress and personality type. Students learn to collect physiological data and calculate statistics using Minitab.

Lab 5 uses the archival method and is based on social psychology, specifically the relation between attitudes/beliefs and behaviors. St. Catherine has administered the College Institutional Research Program survey to first-year students since 1971. Data from these surveys are saved on lab computers; and students generate hypotheses, conduct a literature search on PsycINFO, select items from the survey, and test their hypotheses.

As part of the lab experience, each student is required to write five lab reports in APA style. To assist in writing these reports, students purchase a 90-page lab manual that contains handouts and instructions, as well as supporting materials (e.g., APA guidelines for writing lab reports, a guide to PsycINFO, sample lab reports). Based on our early experiences, we learned that writing full reports for every lab was cumbersome and, at times, overwhelming for students. Thus, the first four reports are partial reports, and the fifth is a full report. The course instructor provides feedback and grades the first and last reports; lab instructors assess the remaining reports.

Comprehensive evaluations are conducted each semester. Surveys are used to evaluate students' comfort level, experience, and interest in several content and skill areas targeted by the labs. Surveys are also used to evaluate each of the specific labs and the lab instructors. In addition, students initially complete pre-tests and later post-tests, as part of their final exam, to measure their knowledge of lab related concepts.

### *The St. Olaf College Experience*

St. Olaf College has long included laboratory and research instruction for its psychology majors, but it did not offer laboratory courses in General Psychology until 1994-95. At that time, a college-wide curricular change resulted in the Department of Psychology being included among those offering introductory courses as core courses in the natural sciences. To meet this challenge, the department obtained an NSF grant and developed laboratory spaces, renovating and strengthening them for use in research.

In 1997-98, with the receipt of another NSF grant, the department extended its goals and included investigative laboratory experiences for introductory students. With renovated spaces and curricular opportunities, students were able to see the possibilities and practices of each research space, work with the researchers and faculty, and participate in investigative work. The goals were to foster inquiry; encourage students to work together in the library, laboratory, and field; and encourage students interested in college or secondary school teaching to teach psychology as an investigative science.

To achieve these goals, the St. Olaf faculty developed small investigative laboratory sections in which students learn how to propose hypotheses; use protocols for gathering data; collect, analyze, and interpret these data; and report their results orally and in written form. Students work together in groups of three, sharing their data and interpretations, and then present their findings to the other students in their laboratory section. Therefore, students in these courses have, from the outset, an understanding of psychology grounded in scientific activity, rather than derived through the consumption of predigested ideas. These courses thus avoid what Whitehead (1967) termed the blight of "inert ideas," and they help students develop a more rigorous and critical frame of reference that they can use when they encounter claims made about psychology in the larger culture.

The St. Olaf faculty members encourage students interested in teaching to serve as preceptors for the course. Preceptors are students "who earn credit by learning course material while assisting faculty members" (The 1994-1995 St. Olaf College Catalog, 1994, p. 6). The preceptors for General Psychology teach with faculty in the laboratory; help other students formulate testable research questions; and advise on observation, experimentation, ethics in research, data analysis, and presentation format. In addition, preceptors attend lectures, read the assigned material, and assist with constructing and grading examinations.

It is a common dictum that the best way to learn is to teach. Psychology preceptors gain experience from teaching with a college professor and report being better prepared to instruct their own students. They become well grounded in the discipline of psychology, especially in

designing and conducting research. Thus, the inclusion of preceptors interested in teaching is likely to improve the teaching of psychology at the secondary, college, and university levels.

These laboratories also encourage students to work together as a community of learners. This collaborative-learning model extends from small research groups of three students to laboratory sections of 15 students, and to a classroom of 60 or 120 students. Collaborative learning also continues in an integrated course component on information literacy and fluency. Under the direction of a reference librarian, students learn a logical sequence of doing research in the library, focusing on the investigative questions they ask. Finally, collaborative learning is used in a field project in which groups of students make behavioral observations as part of a larger class research study.

The introductory laboratories reflect the specific interests of the St. Olaf psychology faculty. Each investigative laboratory is designed around a prominent psychological question that students may approach from a variety of standpoints (e.g., What might eye blinks reveal about attention? How can noise be beneficial? Can a subjective illusion be measured?).

Students working in small groups discuss the question and, with the support of their professor and preceptor, devise testable hypotheses and design and carry out the study. Finally, they prepare a full APA-style report. Students complete the Discussion section of each report in the week following the investigative laboratory experience. This section has two parts: a discussion of the findings and a discussion of the process. In the discussion of process, students reflect on the outcomes they obtained and extend their thinking from the laboratory to the outside world; in essence, they report on the meaning or significance of their results. Finally, students reflect on the process of investigation—the value of teamwork, sharing ideas, insightful observations, difficulties encountered, and what they learned from the research process.

### *Concluding Note*

The goal of this paper was to inform readers that the introductory course, largely populated by first- and second-year students, can include a substantial laboratory component and that it can take on different forms. The introductory laboratories at the College of St. Catherine and St. Olaf College stand as illustrations and do not exhaust the possibilities. In both cases, the way in which each department includes a laboratory in General Psychology is a matter of the history, experiences, and realities of each institution. We would advise our colleagues at other institutions who are contemplating a move to introductory labs to keep this in mind.

Most important, we think, is that students of psychology fully and completely understand that the laboratory and psychology are closely intertwined and, in fact, “[i]t is the establishment of the laboratory that marks the transition of psychology from philosophy to science” (Benjamin, 2000, p. 318). Furthermore, it is essential that students’ time in the laboratory is not simply a matter of demonstration projects but rather that “every student should be presented an opportunity to understand what science is, and is not, and to be involved in some way in scientific inquiry, not just a ‘hands-on’ experience” (NSF Advisory Committee, 1996, p. 2).

As a final note, we have both short-term and long-term objectives. In the short-term, we hope that our experiences will help others make the case for a General Psychology laboratory at their own institutions. In the long-term, we hope that undergraduate students will be no more puzzled by a laboratory in General Psychology than they would be by a laboratory in General Biology, Physics, or Chemistry.

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***Teaching Online: The Brave and Energizing New World***

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(This essay originally appeared as the monthly "E-xcellence in Teaching" e-column in the *PsychTeacher Electronic Discussion List* for February 2004.)

For most of us, using technology—in particular, the Internet—has become second nature. It is a vital part of our teaching and professional (and probably personal) lives. It is hard to imagine teaching without using some type of technology. Yet many of us use technology sporadically and see it only as something "extra." We do not see it as a vital component of the course or of learning. It is the cherry on top of the sundae, not the ice cream. At the same time, it is clear that a new trend in education is moving the entire learning environment to the Internet. However, many professors are reluctant to move their entire course online. For those of us who began teaching when technology meant an IBM Selectric typewriter and a cumbersome Betamax (video) player, it is hard to imagine moving an entire course online; it is difficult to accept that the online classroom can really be as good as the physical classroom.

Yet I have had precisely that experience. I began teaching a long time ago when we used mimeograph machines, and technology meant using a film strip. Although I was excited about new technology that came out during my years of teaching, much of which I incorporated into my classes, I remained skeptical about teaching an entire class online. I thought online courses would essentially be correspondence courses, taught through the computer rather than through the U.S. mail. There would be little interaction, and students would simply read the text and send in papers. The only plus of using the computer would be that assignments would be delivered more promptly. I had a surprise coming.

I started teaching in alternative delivery formats as an adjunct for University of Maryland University College (UMUC), a campus of the University of Maryland system whose mission is to work with adult learners. As such, UMUC offers their courses in many alternative formats including ITV (interactive television, broadcast from a central location to remote students) and telephone. I taught for UMUC for several years using various distance formats, including courses by mail and by telephone. Although there were tradeoffs with each of these delivery formats, they served the nontraditional UMUC population. I found that these alternative formats were not as satisfactory as face-to-face classes, and although I had some terrific students in those courses, I always felt as though they were missing a part of the educational experience, especially in the mail and telephone courses that were becoming an increasingly large part of the offerings. Yet those formats were necessary to serve the UMUC population, and I did my best, as did my students.

As time progressed and technology improved, UMUC began to invest heavily in online education. When that happened, there were requests from the chair of the Psychology department for faculty to take online training and become certified to teach online. I resisted until one summer session about 6 years ago. UMUC offers traditional classroom courses, but they are always offered at night or on weekends in order to serve the students' schedules. During that

summer session, classes met two nights a week, 4 hours per night (not including drive time, which, in the DC area, can add an hour each way). That time commitment caused me to miss multiple baseball games of the team with which I do some work. One night, as I sat on the Beltway for an hour following a 4-hour class, it occurred to me that if I taught online I would not miss any games! So, I signed up for the training, still not convinced that online classes would be as good as face-to-face instruction and sure that it would have the same problems as other alternative delivery formats. Was I wrong! What did I discover?

Moving to the online environment requires a paradigm shift in how we think about education; it requires the acquisition of new beliefs about what teaching is. In doing so, we can actually go back to denotative roots of the word education, “educare,” which means “to lead out.” We become facilitators rather than providers of knowledge, and students shift from passive to active learners. Of course, not all students manage this shift successfully (nor do all instructors who move to the online environment), but it is exciting and gratifying to watch those students who do make the shift as they take charge of their own learning.

Along with rethinking the educational process and what it means for course design, migrating online also means rethinking and restructuring the role of the teacher. Most importantly for me (and probably for most of us) is the change in the course dynamic. Traditionally, the teacher is in front of the classroom and controls most, if not all, of how the course flows. This approach is often called the “sage on the stage.” As online instructors, we have to be comfortable giving up some control. Teaching online requires instructors to shift their fundamental thinking about the traditional roles of teacher and student. In online courses, the instructor is less didactic and more facilitating. We become the “guide on the side.” Students share much more in the learning process.

Changing this dynamic is not the path for everyone. Just because you are a good teacher in the classroom does not mean you will be a good teacher online. Some teachers who are great in the classroom fail miserably online, and vice versa. The two mediums require completely different approaches to designing how you reach your course objectives and how you interact with students. Giving up some of that power can be a scary adventure, and it can be hard to convince students that they must share in the process. However, once that shift has been made, even introductory courses can become similar to graduate seminars in which everyone is exploring the material and contributing to the learning process. This does not mean that introductory students always have insights similar to graduate students, but the courses flow more like a seminar.

The move to online teaching can be a truly energizing experience. I have been teaching for a long time and when I moved to the online environment, I saw it as just another classroom. I found instead an unexpectedly exciting place to teach, which has been revitalizing. Changing directions like this can be a challenge, but such challenges are often the most fun part of teaching.

Contrary to intuition, online classes are not alienating, mass-produced products. They are labor intensive, text-based, intellectually challenging places that can elicit deeper thinking on the part of students and create more equality between instructor and students. The initial anonymity of the “faceless” online classroom quickly fades, and more one-to-one relationships can be

developed than in the traditional classroom, because there is more interaction among all involved.

There are many pleasures in the online classroom. For example, the online classroom is a great lab for testing principles of learning—reinforcement, shaping, and schedules. It is easier in the online classroom than in the traditional classroom to see how these principles actually work. Another pleasure comes from student participation. A higher percentage of students, including those whom I suspect would be quiet in the face-to-face classroom, participate actively. I see more thoughtful answers from students because they do not have to answer immediately. The postings indicate that they have spent time with the course material and care about learning. A student in my fall 2003 introduction to psychology class said, “As a first time online student, I found the online discussions as stimulating and thought provoking as discussions in more traditional classroom settings. I felt my fellow students were intelligent, articulate, and very respectful of others’ opinions.”

Paradoxically, I have better relationships with the students in my online classes. When I write recommendations for graduate school, I have more information on which to base my comments, because I have seen their work habits, diligence, writing skills, and interaction with other students. Although I have not seen their faces—and it is always a surprise when I meet them in person because they never look as I imagined—I have a better sense of their abilities than I do with most face-to-face students.

Because UMUC is global, I have more diverse student populations. I have had students from Africa, Europe, and Asia, and their perspectives contribute a great deal to the discussions. Even at Prince George’s Community College, I have had a wide range of students in terms of age, ethnicity, and experience. Perhaps the anonymity of the online classroom encourages enrollment of students who might otherwise feel alienated from the traditional classroom.

Teaching online allows me to work during my best time, which is early morning. I can teach in my pajamas with a coffeepot at my hand. Teaching online allows me to travel to professional conferences (or even take vacations) without worrying about whether there is something meaningful for students to do. And I can even watch baseball while I am “teaching.”

There are drawbacks, however. Online teaching takes far more time than traditional, face-to-face classes. The initial offering is incredibly time-intensive as you must convert your course to the online environment, which involves much more than just cutting and pasting your notes. Learning to navigate the course management system (e.g., WebCT, Blackboard) is also time-consuming. In addition, because students have much easier access to you, it can be hard to get them to understand that, although you are just a click away, you are not online and available “24/7.”

Learning to manage your time effectively is also a challenge. There is far more reading than in traditional classes, because all responses are written. Although you do not have to respond to each student posting, you do have to read them. You have to learn to be very clear with your directions; no matter how much I rewrite, there are students who still do not understand (or read)

the directions. Finally, there are the technology issues. Glitches and lost connections are a fact of technological life. You have to be flexible in order to deal with them.

Online education holds many promises. Distance education is seen as an answer to the needs of large segments of the population. Not everyone can afford, or needs, a traditional residential college experience. We need to meet students where they are and work with them in ways that take advantage of their available time and interests. Such alternative formats allow us to extend education to those whose lives will not let them attend traditional class hours. They bring their experiences to the class, which enriches everyone. These are often my best students, and I wonder how much more they would shine if they had the chance to attend traditional classes and focus solely on their education. In the online classroom, education becomes a two-way street; the instructor is no longer solely responsible for learning. This dynamic makes learning and teaching exciting.

What would I recommend to someone considering a move to the online environment?

- 1) Find a colleague who teaches online and shadow the course. Better still, take an online course somewhere. That will give you some sense of what it is like to be an online student.
- 2) Take any training for teaching online that you can find.
- 3) Be honest about your time and your technology skills. Although you do not have to be a computer whiz, you do need to have computer skills. Get those before you try to teach online.
- 4) Be sure you have good equipment, including a large monitor and a cable connection.
- 5) Be prepared to change your view of what it means to be a teacher.
- 6) Develop patience, as it takes a great deal, especially during the first few weeks of class.
- 7) Be flexible. Technology alone requires flexibility, as do students learning to navigate the online environment.
- 8) Finally, enjoy the ride. If you have an open mind and are willing to struggle, the online classroom can be an exhilarating experience!

***Student Misconceptions in the Psychology Classroom***

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column in the *PsychTeacher Electronic Discussion List* for March 2004.)

The greatest challenge facing psychology teachers may not be teaching students new information, but teaching them that what they already believe to be true about psychology is often wrong. In class, students bring with them a wide array of misconceptions and misunderstandings that many, if not most, teachers assume to be benign or easily corrected through sage instruction. Psychologists ought to know better. These misconceptions are not benign: They affect students’ ability to learn and understand new information, and these beliefs can be remarkably resistant to change.

Consider the extramission theory of vision, the mistaken belief that people see by emitting rays from their eyes that reflect off objects. This seems like a relatively simple misconception that should be easily corrected by reading the sensation chapter of any introductory psychology textbook. Winer, Cottrell, Gregg, Fournier, and Bica (2002) summarized a series of studies that found this belief to be fairly common and hard to correct. To the naïve layperson, the idea that we see by emitting rays seems intuitively logical and is reinforced through popular images (e.g., Superman’s x-ray vision). Depending on how one tests for it, more than one-half the population may hold some version of this belief. Moreover, after reviewing a number of studies that tried to correct extramission beliefs, Winer et al. “found no evidence that traditional readings presented immediately before the test, formal classroom experiences, or the combination of both improved performance” (p. 421). They did find, however, that when college students were shown a highly simplified lecture on vision containing explicit refutational statements about extramission beliefs, there was a reduction in those beliefs. The improvement, though, was temporary and disappeared after 5 months. Thus, it may be that students leave our psychology courses with their misconceptions intact. Indeed, they may actually feel more confident in their mistaken beliefs because they have taken a psychology course (Landau & Bavaria, 2003)!

Where do these misconceptions come from and why are they so resistant to correction? Misconceptions come from a variety of sources. The popular media promulgate many. Examples include the beliefs that being hit on the head causes complete retrograde amnesia, that subliminal messages are powerfully persuasive, and that we only use 10% of our brain or only the left hemisphere of our brain (or 10% of the left hemisphere). Other misconceptions may be “rules of thumb” built up through subjective experience and strengthened by confirmation bias. For example, most people believe they are “good listeners.” Stereotyped and prejudicial beliefs about certain groups of people also fall into this category.

Other misconceptions—that blind people develop greater sensitivity in other senses, that babies and parents develop attachment at birth, and that actions must flow from attitudes—develop because they seem intuitively logical, fair, or just. Some simplistic misconceptions take hold because they are easier to grasp than more complicated, confusable, or counterintuitive truths.

Examples include students' difficulty distinguishing negative reinforcement from punishment, learning that genetics and environment interact and are not additive, and understanding that negative correlations can be as strong as positive ones.

Finally, some misconceptions are developed and entrenched because they are part of a person's self-image. When I teach about Milgram's obedience studies, many of my students are aghast that 65% of subjects would administer the highest level of shock, yet few of my students are willing to believe they might be among that 65% if they were put in that situation.

I have listed only a few, but many common misconceptions have been documented (cf. Landau & Bavaria, 2003). They range from global ideas—that psychology is about getting in touch with one's feelings or is just common sense—to the highly specific—mind and body are separate and one can choose to ignore one's brain. Such misconceptions are not unique to psychology. They have also been studied extensively in physics and biology (Gardner, 1991). The problem is that such beliefs are even more pervasive in psychology, and this presents special teaching challenges.

The fact that students have misconceptions would be irrelevant if such beliefs had no impact on further learning. A large body of literature on schema and learning, however, indicates this is not the case. One's schema, or belief system, can have a major impact on what is noticed, what is learned, what is forgotten, and how memories may become distorted (e.g., Bower, Black & Turner, 1979; Bransford, & Johnson, 1972).

If these misconceptions are prevalent and if they influence learning, why are they not a more central issue in teaching? Many teachers fail to address these misconceptions because they believe the primary focus of teaching is presenting information accurately and clearly. What the students bring to and take away from their teaching is not the teacher's responsibility. It is only when a teacher shifts the primary focus away from what is taught to what students are actually learning that these misconceptions become a major concern.

The next question, then, is how to correct the tenacious misconceptions that affect whether and what students learn. This question addresses the fundamental issue of how systems of belief are changed or refined through experience. Piaget called this accommodation, and although he distinguished it from assimilation, he never specified under what conditions accommodation occurs and under what conditions assimilation occurs. Likewise, there is relatively little research in schema theory about when and how schemata are refined through interaction with the environment. One exception is the work of Vosniadou and Brewer (1992), who studied how children move from the intuitive belief that the earth is flat to the correct belief that the earth is a sphere. They found that internalizing the correct belief takes many years and involves many incorrect transitional beliefs. This finding underlines the challenge of changing misconceptions.

Winer et al. (2002) suggested a process they call "activation" to counter misconceptions. Activation involves alerting students to misconceptions before presenting the relevant, accurate information. One method of achieving activation is through the use of examples that are engaging, relevant, and make clear the shortcomings of a misconception. Although virtually all teachers use examples, relatively few actually select or design examples explicitly to meet these

criteria (e.g., Ward & Sweller, 1990). Even when they do, however, using examples effectively is not straightforward (e.g., Lee & Hutchison, 1998).

Another method I have used with some success is the ConcepTest, which Mazur (1997) developed to teach physics. ConcepTests are an engaging and interesting way to make both teacher and students aware of the limits of student understanding. They are easy to develop and use, and can be used in classes of any size. I have described their development and use in the Winter 2004 issue of the Psychology Teachers Network newsletter (Chew, 2004). Because the newsletter is available online at the Teachers of Psychology in Secondary Schools (TOPSS) homepage on the American Psychological Association website <http://www.apa.org/ed/topss/homepage.html>, I will not go into great detail here.

Essentially, a ConcepTest is a good multiple choice question that has a common misconception as a lure. Here is one I use for correlations:

A marriage counselor studies four different tests designed to predict marital happiness to see which one is best. She administers the four tests to 80 couples who are about to get married. After two years, she measures the marital happiness of the couples and correlates it with each of the four tests with the following results:

Test 1: $r = -.73$	Test 2: $r = .62$
Test 3: $r = .25$	Test 4: $r = .10$

If the therapist wanted to pick the single best test to use in her work, which one should she choose and why?

The correct answer is Test 1:  $r = -.73$  because it is the strongest correlation. Many students, however, have the misconception that positive correlations are better than negative ones, so they pick Test 2. The key to using ConcepTests is following the procedure outlined below. For example, after lecturing on correlations:

1. I present the ConcepTest to the class and give them time to think about which answer they believe is correct. This takes about 3 min.
2. On my signal, all students publicly indicate their answers by raising their hands with the number of fingers of their chosen alternative.
3. I have students pick a classmate, preferably one with a different answer, to discuss their choices, which takes about 2-3 min
4. I repeat Step 2 to see how choices have changed, and if there is a consensus.
5. Finally, I have students explain their choices and discuss the correct answer as a class, which

typically takes 2 min or more.

Notice how all students must publicly commit to an answer, defend the answer to a peer, and then commit again. Their misconception, or correct understanding, is activated, and then they learn the correct answer and reasoning behind it. Thus, activation is achieved.

In my introductory psychology courses, I have tested the effectiveness of ConcepTests in correcting misconceptions about correlations. My research has found that they do lead to significant increases in learning at both the factual and conceptual levels of understanding. Although ConcepTests do lead to significant improvement in understanding, student performance is far from perfect, indicating the difficulty of overcoming certain misconceptions.

In conclusion, I have tried to describe how students often possess misconceptions about psychology and how difficult they can be to correct. These misconceptions have a major impact on what students do and do not learn in a course. Many teachers choose to ignore their presence and impact, acting as if they are benign or irrelevant to teaching. Unfortunately, this in itself is a dangerous misconception.

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***Teaching and Learning When We Least Expect It:  
The Role of Critical Moments in Student Development***

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column in the *PsychTeacher Electronic Discussion List* for April 2004.)

The old-time teaching tradition places teachers at the front of the class, disseminating their knowledge to students who later, with delight, restate the same knowledge to demonstrate their understanding. I picture Wilhelm Wundt flexing his intellectual muscles in this way, though I may be wrong. Ideas of how teachers should behave, however, have been altered by our contemporary understanding of how people learn (Bransford, Brown, & Cocking, 1999). We should give Professor Wundt his due respect, but then fast forward to the 21<sup>st</sup> century.

Along with changing our behavior as teachers, our current conceptions of teaching and learning have modified the metaphors we use to describe our craft. We now see students as actively constructing their own knowledge, rather than passively receiving ours (Baxter Magolda, 1992, 2001). Instead of picturing teachers as giant mainframes who download their knowledge, we now envision teachers as midwives helping students give birth to their understanding (Belenky, Clinchy, Goldberger, & Tarule, 1997). The midwife metaphor emphasizes the centrality of dialogue, communication, connection, and relationship in the learning process.

I have always liked the midwife metaphor, but it still neglects important dimensions of the learning process. We know, for example, that important learning takes place outside the classroom when students talk to each other in residence halls, the cafeteria, or the local pub (Light, 2001). By speaking to each other, engaging in friendly or heated debates, students construct and reconstruct what they know, and the “teacher” is nowhere in sight. Significant learning takes place in these out-of-classroom contexts, and we should not underestimate their importance. Thus, the midwife metaphor, though good, is still incomplete.

In fact, no metaphor can fully capture the range of what we as teachers do. The computer mainframe metaphor is applicable, for example, to one dimension of teaching—lecturing. Thus far, I have implied that lecturing is not an effective teaching approach and, in so doing, I have been guilty of oversimplification. To be fair, considerable research has examined the efficacy of lecture-based instruction (Lowman, 1995), and it would be silly to dismiss the lecture as an unsound pedagogical practice. Wundt may have done a fair share of lecturing, and it did not seem to harm students like G. Stanley Hall. Similarly, many of us were lectured to a good deal during our educational experiences, and we were not ruined for life. When carefully organized and used in moderation, lectures can present up-to-date content not in the text; help students organize complex material; motivate students to seek more information; and model problem solving, critical thinking, intellectual curiosity, and enthusiasm (McKeachie, 2002). At the same time, lectures alone are not adequate to facilitate deep understanding (Halpern & Hakel, 2003).

We still need a healthy dose of midwifery. Taken together, both metaphors—mainframe and midwife—convey the complexity of teaching and learning.

Taking into account these teaching metaphors and the research on effective teaching, I am still perplexed, however. Here's why: When I pause and reflect on my most profound educational experiences, I do not recall riveting lectures, spellbinding group work, or exhilarating discussions in my dorm. As an undergraduate student, I recall instances like these:

1. Dr. Donald Searing, a political science professor, encouraged me to consider a graduate program at Yale University. Whether I could have actually gained admission to this program is debatable. The point is that he (a superhero in my view) thought I should consider it. That remark stuck with me and altered how I saw myself as a student. Neither of my parents completed a 4-year college, and one of my brothers had flunked out by the time I got there. So when I arrived on campus, I was intimidated by the academic game. When Dr. Searing made this comment, it caught my attention in a big way.

2. Dr. Edward Johnson, my cognitive psychology professor, shared with the class a story of how Koko, the famous gorilla who used American Sign Language in inter-species communication, lied when asked whether she broke something. Koko broke it, but blamed it on someone else. This story powerfully affected me and made me re-think how I understood myself as a human and my place among other animals.

3. The moment I clearly understood the logic of hypothesis testing and p-values in my undergraduate statistics course is another such experience. I do not remember her name, but I am eternally indebted to the graduate teaching assistant in quantitative psychology who was my midwife during that difficult labor.

I have come to call experiences like these “critical moments in learning” (Giordano, 2003a). They are specific, identifiable moments that typically are transformative. These moments tend to possess one or more of the following characteristics: (a) they are rare (in the sense that people report few), (b) they are related to personal issues, (c) they have an emotional dimension, (d) it takes time for the student to realize the significance of the moment, (e) they are difficult to predict, and (f) teachers likely do not know when they occur.

I am particularly intrigued by this last characteristic. It is humbling (and perhaps troubling) to think this characteristic may be true, but the more I hear teaching colleagues share their experiences, the more convinced I am that it is. Consider the following example, which a colleague at another university shared with me. Several years after graduation, a former student who had gone on to earn his MBA came by to visit her. During the conversation, he said to her, “I owe it all to you. I was going to stop school after the BA and just get a job. But when you—a PhD and a professor—told me you thought I was bright, I began to rethink everything about myself.” My colleague's response: “I barely recalled the incident, and it amazed me that a 5-second remark would change a life.” I have heard other, similar stories from colleagues.

The connection between this story and the personal account I shared about Professor Searing is obvious. Let me make the stories even more similar. About 4 years after I completed my

undergraduate degree, I enrolled in graduate school at the same institution. During my second year, I saw Dr. Searing at a local restaurant and decided to walk over and tell him the impact his remark had on me. I wanted to thank him and tell him that this one statement had an important influence on my confidence to pursue graduate studies. As I talked to him, it was clear that he did not recall the remark. It was also obvious that he probably did not remember me either. Gracious and kind, he pretended he did, but I was not convinced.

As it turns out, these types of experiences—these critical moments—are reported by many people. I have been collecting data, narratives that students have been independently coding, that reflect the frequency of these experiences in a sample of psychology professors from a variety of universities, and from alumni at my university (Giordano, 2003b). A detailed summary of these findings is not appropriate here, but the narratives have been revealing. Consider, for example, that the stories I have shared in this essay have all been positive. As you might suspect, however, not all those who have written narratives tell positive stories—the majority do, but not all of them. Some have related quite unpleasant experiences. The typical scenario is one in which a professor made a careless negative remark that reverberated in the person’s memory for many years. Sometimes the negative comment motivated the person into an “I’ll show you” reaction, which culminated in a positive outcome; other times, the outcome remained negative.

Taken together, the narratives have some important implications. The most significant one is that our students’ beliefs about themselves and about their academic disciplines have an impact on their learning (Halpern & Hakel, 2003). If a student believes she is not capable of meeting the demands of graduate study, she may never even apply. In a different vein, the sense of accomplishment from a cognitive breakthrough might suddenly give a student the self-efficacy to set goals even higher. Or, the intellectual reorientation that results from learning something profoundly novel (e.g., Koko telling a fib) might shift a student’s academic focus to a new area that he has never considered. Interestingly, most of the narratives have focused on personal learning (i.e., a change in self-perception) rather than on cognitive learning (i.e., a change in intellectual understanding).

Therefore, one question we might ask is: “Do we always know when we are teaching?” I do not think we do. The single most important thing I learned as an undergraduate may have been that I was capable of graduate study. I learned this from a professor who had no idea he taught it to me. Brief remarks that seem innocuous to us may have a lasting impact on our students. Hopefully, the influence is positive. I do not mean to give us more importance or power as teachers than we actually possess. However, a different but equally significant error may be to ignore the potential impact we can have at moments when we are least aware of what we are saying.

Let’s return to teaching metaphors. Lately, I’ve enjoyed an image offered by Baxter Magolda (2002). She believes that to be effective teachers and mentors, we need to be “good company” to our students. Good company means that we are supportive of our students, guiding but not micro-managing them in their development of more complex intellectual abilities and in their growing confidence in directing their own lives. If we are good company, then we challenge students personally and intellectually, all the while supporting them as they navigate the

complexities and ambiguities of deep learning. By being judicious with our critical remarks and appropriately generous (but not overindulgent) with our praise, we may maximize the likelihood of positive critical moments in the lives of our students. Such moments are evidence of being good company.

After reading these narratives during the last year or so, I pay much more attention to my idle words to students. For sure, I pay more attention to the quiet students who seem awkward in navigating the academic waters. I do not know all their personal stories and will likely know very little about most of them when they exit my classroom at the end of the semester. But now when I am grading a paper or an exam, I more frequently comment when their writing is compelling or their thinking lucid. I do not know if I am actually teaching at those moments. I hope that I am.

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***Deconstructing “Playing the Race Card” in Psychology Courses:  
An Invitation to Dialogue and Exploration***

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The concept “playing the race card” has been bantered about in the media during the last 10 years, most often in criminal justice or political contexts. Although several definitions of playing the race card have been offered (e.g., Mendelberg, 2001), for our purposes, playing the race card can be defined as introducing race for one’s own benefit in a context or setting in which it is irrelevant.

Playing the race card is typically seen as a negative, personally motivated tactic; or a situation where an individual could have accomplished her or his goal(s) or supported an argument without introducing race. Williams (2001) pointed out that, historically, both African Americans and Whites have played the race card, with African Americans “deploying the disadvantage of race” (p. 4) and Whites, in turn, dismissing attempts to discuss past and present racial injustice. Therefore, she asserted, one race card of racial grievance is essentially trumped by another, which discredits the need to pay attention to the past. Discussing race in psychology classes can feel like this type of competitive card game. Clearly, this is not the environment I strive to foster in my classes.

Recently, it has become more acceptable to discuss culture or ethnicity in psychology classes, but for many, race is still taboo. Some students are certain that race and psychology do not mix; they believe that race simply is not an important variable in human behavior, development, and interpersonal relations. Students who adhere to this view apparently believe that psychology faculty who discuss race harbor an ulterior motive, are racist, or “have a chip on their shoulder.” For them, race is the purview of sociology and anthropology.

Yetman (1985) noted that race is a social construct:

A society therefore defines a social category as a race when it isolates certain physical characteristics, perceives them to be innate and inherited, and magnifies their importance as differentiating factors. These physical characteristics are usually believed to be related to other immutable mental, emotional, or moral characteristics. (p. 8)

Although I acknowledge that race is socially—and not scientifically—constructed, I believe it should be a central topic in psychology curricula precisely because race and racism are still powerful social and psychological phenomena. Moreover, psychologists have participated, in both negative and positive ways, in the social construction of race (Guthrie, 1998; Hall, 1905,). In addition, many of my students are interested in learning about how psychologists have addressed race and racism. They also want to understand the role of race and racism in their

lives and in societies around the world. Because playing the race card is also a socially constructed concept, I believe it can and must be deconstructed. We should analyze, critique, and evaluate current use of the term and its application to psychology curricula and pedagogy. I want my students to view racial issues as stimulating, important, and relevant.

### Why Should We Discuss Race?

Students in my classes often interpret my interest in and focus on race as playing the race card. Although students and professors can introduce race for the wrong reasons, I argue that we should include race in our courses because (a) race is imminently relevant, though often neglected; (b) psychologists can contribute to understanding race relations and eradicating racism; and (c) when professors teach and write about psychology as if it is “raceless,” they misrepresent the field.

Race should be addressed because policies and practices related to race impact the psychological functioning and social environment of millions of people around the world. Because many of these individuals are our students, race should be kept “on the radar screen” in psychology courses and textbooks. A new, reconstructed race card can prove beneficial to students, and therefore, to the future of the field and society at large. Moreover, it can be an invitation to dialogue and exploration.

Institutional and individual racism, along with other forms of oppression, are unresolved issues (Hansman, Spencer, Grant, & Jackson, 1999; Parham & Whitten, 2003). These conditions influence practice, research, education, and policy making (Hall, 1997). Psychologists must continue their efforts to uncover the roots of these problems and design effective strategies to eradicate them. Exposing students to the role that psychologists play in understanding race and racism will position them to critique past and current contributions of psychologists, and to be informed clinicians, researchers, educators, and change agents in the future.

The introductory course is an appropriate place to bring racial issues from the margins to the center of the curriculum (Whitten, 1993a). Many students will not learn about race and racism in their other courses. Even at colleges and universities that now have diversity requirements, students often are able to avoid taking a course that focuses on race by studying gender, culture, or aging. It is cliché to point out that our country is increasingly diverse, but it is a relevant fact. Grant (2003) asserted that preparation to function in a more global and diverse society includes engaging students in meaningful dialogue about race. Further, he stated that “faculty members can no longer confine racial discourse to ‘selected courses’ or confine racial dialogue to those classes that are factually diverse” (p. 5). It is crucial that we prepare our students to excel in the current social environment.

### Navigating Racial(ized) Waters

In many of my courses, the honeymoon ends when I begin presenting material on race, racism, and/or privilege. Tensions rise, sides are chosen, and battles begin. Students comment on evaluations or in classes that “psychology isn’t about race” or “you’re talking too much about race.” In my Psychology of Violence class, a student complained, “This class is supposed to be

about violence, not race. If I had wanted to take a course on race, I would have taken another course.” Despite clear statements on my syllabi that race will be a central area of focus, some students are still taken aback by the frequency with which I address the topic, and they see it as a hindrance to their learning. They believe I am playing the race card and that I infuse race because it has been an issue in my life, even though it is irrelevant to the topic at hand. Instead, I hope to reconstruct playing the race card so students see the discussion of race as a way to inform and expand their insights into the study of mind and behavior.

At times, I thought students were reacting to reading African Americans’ perspectives on racism. However, even when I presented the classic “Unpacking the Invisible Knapsack of White Privilege” (McIntosh, 1988), which was written by a White woman, several White students had a violent reaction. I recall one instance when a 50-something White man yelled at the top of his lungs, “I don’t care who wrote the article! White privilege does not exist!” It is interesting that I have not experienced similar reactions to topics related to gender. Some students see race as my personal preoccupation. In another interesting interchange, an older White male student asked me, “Why do you always think about race?” He spoke in a tone that expressed some sadness, as if he felt I was exhibiting a significant emotional problem. He continued, “My wife is Dominican. She looks just like you, and she doesn’t think about race.” This situation provided an opportunity for us to discuss the experiences of both Blacks and Whites, and the continued differential impact of public policy on people of various races.

I will always remember my first lecture as a full time professor in 1986—it was for an Introduction to Psychology class. When I reviewed theoretical approaches, I added the Afrocentric approach, even though it wasn’t mentioned in the textbook. At this point, I noticed a Black Jamaican man, who hadn’t previously reacted much to my statements, with huge smile on his face. Apparently, my statements about the benefit of an African-centered understanding of Black people were affirming for him. In the 18 intervening years, I have not seen the Afrocentric approach, or Black Psychology, mentioned, even briefly, in an introductory text. Sadly, many African American psychology seniors have told me that they never learned about the Afrocentric approach or Black Psychology, and had never heard of the *Journal of Black Psychology*.

Despite this, authors and publishers of introductory texts have made considerable progress in addressing diversity. Photographs frequently show people of color in powerful roles and positions of authority. Cultural diversity is addressed in boxed features and is more often infused throughout the text. In the history of psychology section, Kenneth Clarke, and sometimes Mamie Clarke and/or Francis Sumner are featured. Yet the content of most introductory psychology textbooks provides evidence for students that professors who emphasize race are playing the race card. The infrequent or nonexistent references to race and/or racism, and the almost total avoidance of research in which race is a variable all potentially suggest that psychologists do not study race, and do not see it as important. Consequently, students would probably be surprised to learn that a PsycINFO® search on April 11, 2004 revealed 1,498 peer-reviewed articles with “race” as an identifier, and 1,582 articles between 1994 and 2004 with “racial” as an identifier. However, during the same time period, there were 2,461 and 6,295 articles with “culture” and “cultural,” respectively, as identifiers, providing evidence that researchers may be moving away from the study of race in favor of the study of culture.

## Playing the New Race Card – An Invitation

As I have gained professional and life experience, I am even more convinced that one of my primary goals as a psychology professor is to stimulate interest and curiosity about the ways that psychologists have studied race, the social and psychological construction of race, and the role of race in all of my students' lives. A number of strategies can enhance the likelihood that learning will take place in a healthy environment.

1. Consider team teaching classes that emphasize race. If the teachers are of different races, it can shift the dynamic in the classroom and provide “mirrors” for more of the students. The professors can model clear, respectful dialogue about race.
2. Make concise statements at the beginning of the semester that some of the topics, notably race and racism, can be emotionally provocative and controversial, and that the content and process of the course could depart from what students are accustomed to.
3. Before talking at length about race, have students talk and/or write about their experiences with discrimination, privilege, and prejudice.
4. Solicit anonymous written feedback at mid-term, or more often, to get a sense of how the students are experiencing the class, then share and discuss the feedback with the class. Make it clear that you have taken their input seriously.
5. Encourage students to pay attention to both racial similarities and differences.
6. Seek out or arrange opportunities to meet with peers to manage feelings of frustration and isolation, using techniques such as those described by Gillespie, Ashbaugh, and DeFiore (2002).

Despite the numerous challenges inherent in teaching about race, I continue my commitment to helping students and professors become more comfortable addressing race as an issue central to the study of psychology. Together, we can construct a new race card. It is an invitation to discuss race and provides a supportive setting for exploration, dialogue, and increased insight into the complex nature of race, racism, and race relations. It affirms the experience of students for whom race *is* an important topic and helps those who are unaware of the role of race in their lives consider an alternate point of view. It can be used as a template for teaching about other forms of oppression. Finally, it provides a more accurate and nuanced understanding of the field of psychology.

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***Teaching Psychology Students to Distinguish Science from Pseudoscience:  
Pitfalls and Rewards***

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One of our principal goals as educators is to imbue our students with an understanding and appreciation of critical thinking. But what is critical thinking, anyway? A precise answer remains elusive. Nevertheless, it’s safe to say that much, if not all, of critical thinking as applied to psychology is nothing other than scientific thinking. Scientific thinking, in turn, is thinking that counteracts cognitive biases, such as confirmatory bias and hindsight bias, which can lead us to draw subjectively compelling but erroneous conclusions. That is, critical (scientific) thinking is an armamentarium of skills that help prevent us from fooling ourselves. As the Nobel-prize winning physicist Richard Feynman (1985) reminded us, science forces us to bend over backwards to prove ourselves wrong. Although far from perfect, science is the best mechanism humans have developed for filtering out errors in thinking. The essence of science is self-correction.

*Teaching Critical Thinking*

How can we best teach critical thinking skills in our psychology courses? As my colleagues and I have argued elsewhere (Lilienfeld, Lohr, & Morier, 2001), one of the most effective and engaging means of accomplishing this goal is to expose students to erroneous claims, especially those that fall under the rubric of pseudoscience.

This approach may strike many instructors as counterintuitive. After all, we want to teach our students how to reach accurate, not inaccurate, conclusions. Yet as Kelly (1955) pointed out, effective understanding of a construct demands an appreciation of both its poles. For example, one cannot grasp fully the concept of “cold” unless one has experienced heat. Similarly, students may not grasp fully the concept of scientific thinking without an understanding of pseudoscientific beliefs, namely those that at first blush appear to be scientific but are anything but.

*The Warning Signs of Pseudoscience*

What is pseudoscience? Although a precise definition is hard to come by, most would agree that pseudoscientific claims exhibit the superficial trappings of science but precious little of its substance. Moreover, the distinction between science and pseudoscience is probably indistinct rather than clear-cut. Still, this fuzziness does not imply that the difference between science and pseudoscience is meaningless. As the psychophysicist S. S. Stevens observed, the fact that there is no precise boundary demarcating day from night (think of dawn and dusk) does not imply that day and night are indistinguishable (Leahey & Leahey, 1983).

Indeed, most philosophers of science (e.g., Bunge, 1984; see also Lilienfeld, Lynn, & Lohr, 2003; Ruscio, 2002) agree that most pseudoscientific claims share a set of correlated features. Although none of these features is by itself pathognomonic of the “pseudoscience syndrome,” each can be conceptualized as a useful warning sign of its presence. The more warning signs a discipline exhibits, the more suspect it should become in the eyes of students and consumers.

Among the central characteristics of pseudoscientific disciplines are:

1. A tendency to invoke ad hoc hypotheses, which can be thought of as “escape hatches” or loopholes, as a means of immunizing claims from falsification
2. An absence of self-correction and an accompanying intellectual stagnation
3. An emphasis on confirmation rather than refutation
4. A tendency to place the burden of proof on skeptics, not proponents
5. Excessive reliance on anecdotal and testimonial evidence to substantiate claims
6. Evasion of the scrutiny afforded by peer review
7. Absence of “connectivity” (Stanovich, 1997), that is, a failure to build on existing scientific knowledge
8. Use of impressive-sounding jargon, whose primary purpose is to lend claims a facade of scientific respectability
9. An absence of boundary conditions (Hines, 2003), that is, a failure to specify the parameters under which claims do not hold

### *Pseudoscience as a Useful Didactic Tool*

The world of popular psychology is rife with pseudoscientific claims. Self-help books, supermarket tabloids, radio call-in shows, television infomercials and “pseudodocumentaries,” the Internet, and even the nightly news, provide remarkably fertile ground for unsupported claims concerning a host of topics. A selective sampling of these topics includes unidentified flying objects, “scientific” creationism, crop circles, extrasensory perception (ESP), psychokinesis, satanic ritual abuse, polygraph testing, subliminal persuasion, out-of-body experiences, astrology, biorhythms, graphology (handwriting analysis), the Rorschach Inkblot Test, facilitated communication, herbal remedies for memory enhancement, the use of hypnosis for memory recovery, multiple personality disorder...and well, the list goes on and on...and on. Moreover, surveys (e.g., Lamal, 1979) demonstrate that introductory psychology students frequently harbor misconceptions regarding many of these topics. This finding is hardly surprising given that the lion’s share of media coverage of these topics is insufficiently skeptical.

Yet most psychology instructors accord minimal attention to these beliefs (although this trend may gradually be changing), perhaps because they regard them as trivial or as lying outside the boundaries of scientific knowledge. Still others may fear that by exposing students to pseudoscientific claims, they are sending an implicit message that these claims are well supported.

Nevertheless, by neglecting these topics, instructors are forfeiting the opportunity to impart critical thinking skills to students by challenging their beliefs regarding popular psychology. Moreover, these instructors are forfeiting the opportunity to correct students’ misconceptions.

After all, for many beginning students, “psychology” is virtually synonymous with popular psychology. But because so much of popular psychology consists of myths and urban legends (e.g., most people use only 10% of their brains, expressing anger is usually better than holding it in, opposites attract in interpersonal relationships, high self-esteem is necessary for psychological health, schizophrenics have more than one personality), many students probably emerge from psychology courses with the same misconceptions with which they entered. Finally, in our admittedly anecdotal experience, students often find controversial topics on the fringes of scientific knowledge (e.g., ESP, astrology, subliminal persuasion, hypnosis) to be intrinsically fascinating. As a consequence, by addressing these topics in their courses, instructors can readily motivate students to apply their newfound critical thinking skills to highly engaging questions.

### *Potential Pitfalls of Teaching Students about Pseudoscience*

Clearly, there are good didactic reasons for incorporating pseudoscientific and otherwise questionable claims into psychology courses. Nevertheless, when introducing these claims, instructors must remain vigilant of several potential hazards.

First, instructors must be careful not to confuse pseudoscientific claims with claims that are merely false. All scientists, even good ones, make mistakes from time to time. The key distinction between science and pseudoscience lies not in their content (i.e., whether claims are factually correct or incorrect), but rather in their approach to evidence. Science, at least when it operates properly, seeks out contradictory information and—assuming this evidence is replicable and of high quality—eventually incorporates such information into its corpus of knowledge. In contrast, pseudoscience tends to avoid contradictory information (or manages to find a way to reinterpret such information as consistent with its claims) and thereby fails to foster the self-correction that is essential to scientific progress. For example, astrology has changed remarkably little over the past 2500 years despite overwhelmingly negative evidence (Hines, 2003).

Second, instructors must be careful to distinguish science from scientists. Although the scientific method is a prescription for avoiding confirmatory bias (Lilienfeld, 2002), this does not imply that scientists are free of biases. Nor does it imply that all or even most scientists are open to evidence that challenges their cherished beliefs. Instead, it implies that good scientists strive to become aware of their biases and counteract them as much as possible by implementing safeguards (e.g., double-blind control groups) imposed by the scientific method.

Third, it is essential not to imply that students who hold pseudoscientific or otherwise questionable beliefs are foolish or stupid. To the contrary, it is crucial for instructors to emphasize that we are all prone to cognitive illusions (Piatelli-Palmarini, 1994), and that such illusions can be subjectively compelling and difficult to resist. For example, class demonstrations illustrating that many or most of us can fall prey to false memories (e.g., Roediger & McDermott, 1995) can help students see that the psychological processes that lead to erroneous beliefs are pervasive. Moreover, it is important to point out to students that the heuristics (mental shortcuts) that can produce false beliefs, such as representativeness, availability, and anchoring (Tversky & Kahneman, 1974), are generally adaptive and help us

make sense of a complex and confusing world. Hence, most pseudoscientific beliefs are torn from the same cloth as accurate beliefs.

Fourth, instructors must expose students to both poles of the pseudoscience construct (see Kelly, 1955). Thus, in our classes, it is important not merely to debunk inaccurate claims, but to make students aware of accurate claims. In my own advanced undergraduate seminar, *Science and Pseudoscience in Psychology*, I have found it helpful to intersperse pseudoscientific material with material that is equally remarkable but true, such as eidetic imagery, subliminal perception (as opposed to subliminal persuasion, which is far more scientifically dubious), and appropriate clinical uses of hypnosis (as opposed to the scientifically unsupported use of hypnosis for memory recovery; see Lynn, Lock, Myers, & Payne, 1997). In addition, it is useful to bear in mind the late Stephen Jay Gould's point that exposing a falsehood necessarily affirms a truth. As a consequence, it is essential not only to point out false information to students, but to direct them to true information. For example, when explaining why claims regarding biorhythms are baseless (see Hines, 2003), it is helpful to introduce students to claims regarding circadian rhythms, which, although often confused with biorhythms, are supported by rigorous scientific research.

Fifth, and perhaps most controversially, I believe that instructors must distinguish pseudoscientific claims from religious claims that are metaphysical. Unlike pseudoscientific claims, metaphysical claims (Popper, 1959) cannot be tested empirically and therefore lie outside the boundaries of science. In the domain of religion, these include claims regarding the existence of God, the soul, and the afterlife, none of which can be refuted by any conceivable body of scientific evidence. Nevertheless, certain religious or quasi-religious beliefs, such as those involving "intelligent design" theory, which is the newest incarnation of creationism (see Miller, 2000), the Shroud of Turin, and weeping statues of Mother Mary, are indeed testable and hence suitable for critical analysis alongside other questionable naturalistic beliefs. But by confusing pseudoscientific beliefs with religious beliefs that are metaphysical, instructors risk (a) needlessly alienating a sizeable proportion of their students, many of whom may be deeply religious; and (b) (paradoxically) undermining students' critical thinking skills, which require a clear understanding of the difference between testable and untestable claims.

### *The Rewards of Teaching Students about Pseudoscience*

Incorporating pseudoscientific material into psychology courses yields numerous benefits. Informally, a number of students who have taken my *Science and Pseudoscience* seminar have told me that this course fundamentally changed their thinking and persuaded them of the value of open-minded skepticism when considering knowledge claims. Needless to say, such feedback is immensely gratifying.

But as I have already noted, anecdotal evidence has its limitations. Fortunately, some research evidence supports the efficacy of teaching psychology courses on pseudoscience. For example, Morier and Keepports (1994) found that students enrolled in an undergraduate "Science and Pseudoscience" seminar demonstrated a statistically significant reduction in paranormal beliefs relative to a quasi-control group of students enrolled in a psychology and law class over the same time period (see also Dougherty, 2004). They replicated this effect over a 2-year period with two

sections of the course. Wesp and Montgomery (1998) reported that a course on the objective examination of paranormal claims resulted in a statistically significant improvement in the evaluation of reasoning flaws in scientific articles. Specifically, students in this course were better able to identify reasoning errors in articles and provide rival explanations for research findings. Nevertheless, the extent to which the skills acquired in these courses generalize over time and to non-psychological material remains to be determined (Lilienfeld et al., 2001).

### *Conclusion*

Teaching students to distinguish scientific from pseudoscientific claims is an important, if not essential, component of the education of all psychology majors. Although instructors must incorporate pseudoscientific material into their courses with care, thoughtfulness, and sensitivity, the dividend is clear: better critical thinkers!

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***Just-in-Time Teaching: A Web-Based Teaching Approach***

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What are the factors that lead to success in college? Spence (2001) argued that learning occurs best in one-on-one teacher-student relationships, and Astin (1993) identified three critical factors that are essential for student learning and success: student-student interaction, time-on-task, and student-teacher interaction. However, achieving these objectives is often difficult when we are teaching larger and larger classes. For example, a few years ago, the largest class in our department contained 100 students; now we are teaching sections of over 300 students. Is it possible to create sufficient student-student and student-teacher interactions and increase time-on-task while students are sitting in such large classes? How can we structure our classes to include more one-on-one interactions? We believe that the Internet can make the in-class experience more meaningful by providing the interactions necessary for increased student learning.

One Web-based approach, Just-in-Time Teaching (JiTT), was first devised by Novak, Patterson, Gavrin, and Christian (1999) to teach problem solving in physics. We have applied the same JiTT procedure to help our students learn about psychology. In fact, this approach could be applied to teaching in any discipline. Using the Internet, JiTT approximates a one-on-one teacher-student relationship. Specifically, before each class, the instructor obtains information from each student regarding what he or she knows about a topic. Then, the instructor uses that information to help structure the next class. Below we describe the general approach of JiTT, outline its pedagogical advantages, and identify some disadvantages of using this method.

*The JiTT Approach*

First, we ask students to respond to carefully constructed questions that we place on the Web a few days before class. These questions are usually a combination of essay, short-answer, fill-in-the-blank, and multiple-choice, depending on the size of the class. In smaller sections, we use more essay questions, whereas in larger sections (e.g., more than 300 students) we usually use more multiple-choice or fill-in-the-blank questions. (For an example of some JiTT questions, see <<http://cep.jmu.edu/jitt/psyc101/pcq.htm>>)

Once we post the weekly questions, students can go to the Web on their own time and submit their answers before the assigned class. Although we have chosen to use JiTT on a weekly basis, it is possible to use this technique on a daily basis. An advantage, however, of having JiTT exercises on a weekly basis is that students have an entire week to think about the answers. Students can spend as much time as they wish answering questions, but most report spending between 30-60 minutes on each JiTT exercise. We encourage students to use their textbooks and

notes while answering questions. Students can also work in pairs, posting one submission per pair. Students have a deadline to submit their answers, which is usually 2-3 hours before the specified class time. Once the instructor has received the responses, he or she uses them to make the time during class more valuable for both students and instructor. For example, if all of the students answer a question about operant conditioning correctly, the instructor does not need to spend valuable class time reviewing this topic. However, if students confuse punishment and negative reinforcement in their submissions, the instructor knows to review these misunderstandings and clarify the differences between these concepts.

### *Pedagogical Benefits*

There are several aspects of JiTT that facilitate student learning. First, JiTT encourages students to spend more time reading assignments and preparing for class. Astin (1993) argued that success in college is a function of how much time students spend reading and working with intellectual ideas. In accordance, we ask questions that require students to read the assigned materials. Other arrangements that encourage reading before class, such as giving quizzes at the beginning of class, may take valuable class time and may not provide us with timely information regarding students' misunderstandings. With JiTT, we can ask questions that require students to integrate and analyze ideas that have been discussed in previous classes. Whereas we used to give these types of questions only on exams, with JiTT, we can now discuss answers to these conceptual questions in class and help students better prepare for future exams. In essence, JiTT encourages students to evaluate ideas critically in preparation for classes and exams.

Second, JiTT increases student-to-student interaction. In normal classroom arrangements, students seldom have a chance to read other students' writings or see how other students have attempted to solve a particular problem. The JiTT approach allows this to happen. When we read students' responses, we often choose exemplars and present them anonymously to the class to make a point and/or to stimulate class discussion. Sometimes we might present responses that incorrectly or only partially answer the question and then follow those responses with excellent answers. Not only does this process allow students to see examples of other students' work, it also increases student motivation to submit carefully written answers, which might be displayed during class. Students report that they learn from discussing their peers' answers in class. In fact, several students have reported trying to write excellent answers in order to increase the likelihood that their answers will be selected for class discussion.

Another way to increase interaction between students is to require them to work in pairs when submitting their responses. This approach might decrease performance anxiety and, more importantly, encourage students to discuss the essential issues and ideas of the course and ultimately learn from each other.

Third, JiTT increases contact between student and instructor, which is usually lacking in large classes. When students come to a typical college class, the instructor often has to guess what the students know. JiTT provides an opportunity for the instructor to read student submissions just before class and identify misunderstandings, misconceptions, and false beliefs. This information is then used to correct and/or build on the current level of understanding. In this way, JiTT

simulates a tutorial relationship where the tutor determines what the students know before building on or correcting that knowledge.

Also, many students are intimidated by the notion of stating their opinions and/or asking questions, especially in larger classes. Therefore, we always add an optional question to which students can respond and provide the instructor with comments. Generally, the content of the comments ranges from questions about assignments or grades to positive comments about the class to insights gained from class. If a response is required or if several students have the same comment, we can address it during class or e-mail the students individually. Moreover, these comments often help us get to know our students better.

Fourth, JiTT provides prompt feedback to students. Within a couple of hours of submitting their answers, students are shown other responses that are both correct and either incorrect or incomplete. After discussing the responses in class, students typically report that they understand the topics more fully. For example, 90% of the students in a psychological statistics course found it helpful to discuss different answers in class (Benedict & Anderton, 2004).

Because one of the major goals of JiTT is to provide the instructor with information regarding student comprehension, we usually give partial credit for attempting each assignment. In large classes, we have used a software program called Blackboard (Blackboard, Inc., 2002) to post and grade student submissions. This software program can be set to grade multiple-choice and fill-in-the-blank questions automatically, thus providing immediate feedback. The short-answer questions, however, need to be graded individually by the instructor and may take up to 2 hours per week for large sections. Although we do not always have time to grade each submission before class, we can usually grade and return them in the next day or two, thus still providing relatively quick feedback.

Fifth, JiTT facilitates the development of student meta-cognition. Meta-cognition is the level of awareness of one's understanding of a topic. When students are shown examples of their peers' complete, incomplete, and misconceived answers, they are better able to build an accurate awareness of their own levels of understanding. They can remember what they submitted and compare that with the answers discussed in class.

### *Disadvantages*

There are disadvantages to using the JiTT approach, however. First, students may consider it a hassle to complete these daily or weekly on-line assignments. Second, because each assignment is only worth a small percentage of the total grade, it can be easy for students to skip or forget the assignment. Finally, it does create extra work for the instructor, especially when marking the student submissions.

We have dealt with these concerns by framing JiTT exercises in a positive light. We try to help students understand how the class, as a whole, benefits from JiTT. The main purpose of JiTT is to provide the faculty member with feedback about students' comprehension of course content. If the class seems to understand a concept, class time will not be wasted rehashing a topic everyone already understands. However, if the majority of a class is confused about a concept,

more class time will then be devoted to that topic. Thus, JiTT helps students by letting them adjust the speed at which course material is covered. We hope that reminding students about the main purpose of JiTT reduces their perception that the assignments are a hassle or not worth enough points.

Although grading JiTT assignments is extra work, the instructor does get valuable information about how students are learning the material. Because this additional information can improve the flow of the class, we believe that the extra work is worthwhile.

### *In Summary*

We believe that JiTT improves classes because it encourages students to work outside of class, and it provides additional feedback to both students and faculty. As class sizes have increased, it has become more difficult for instructors to give students individual feedback on a regular basis. Critics of large classes worry that students are not able to develop the one-on-one, teacher-student relationships necessary to facilitate learning (Spence, 2001). Through the Internet, instructors of large classes (and small classes as well) can foster stronger relationships with their students by using the JiTT approach.

This approach also provides the instructor with extra feedback about students' comprehension of the course content. Although this extra feedback is important for all instructors, we believe it is particularly important for less-experienced faculty. When teaching a course for the first time, it is very difficult to know how to pace the class. Students' answers to JiTT exercises can help instructors gauge which material needs additional class time.

Finally, although JiTT can be extra work for the student and the instructor, we believe the benefits of using JiTT outweigh the disadvantages. Given our positive reactions to the approach and the positive evaluations we have received from students, we will continue using Just-in-Time Teaching.

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*Using In-Class Debates to Teach Gender Issues in Psychology*

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In today's society, gender roles are in a state of transition. Gone are the days when male and female "spheres" were separate and clearly defined. The current philosophy in our society encourages young males and females to set their aspirations high and to "shoot for the stars." Young people growing up in the present era have seen females in powerful social roles and positions that previous generations had not (e.g., National Security Advisor, U.S. Attorney General, Supreme Court Justice). The expression "you can have it all" describes the seemingly endless opportunities available to today's generation.

However, a closer look at modern society from the social science perspective yields a different outlook. When students enroll in a college course such as Psychology of Women or Sociology of Sex and Gender, they have an opportunity to learn how social forces act upon their lives on a daily basis. Students face challenges to their own personal beliefs and often question their socialization. They learn that achieving their highest aspirations and "having it all" may not be as easy as it sounds. Students learn that, in reality, there continue to be gender inequities and other subtle forms of discrimination in our society and in other societies around the world.

One of the challenges faced by college instructors who teach about gender is dealing with different student attitudes. Despite great social change in male and female roles, many young people cling to traditional attitudes and role expectations, whereas others have adopted a more liberal outlook. It is this diversity in perspective that sets the stage for a lively exchange of ideas in the classroom.

Instructors should approach a course on gender by acknowledging that we live in an extremely complex world and that gender roles are now defined in numerous ways. Such a course should not be used as a personal soapbox, because students may feel alienated and become less receptive to the course material if it is continuously presented only from the instructor's perspective. For this reason and others, the use of the in-class debate in courses on gender is an effective teaching tool that allows exploration of both sides of relatively controversial issues (Elliot, 1993).

This essay presents two formats for using the in-class debate as a strategy to foster critical thinking in courses on gender. Both strategies require students to research and defend a stance they may or may not support.

## *Debate Method #1*

To initiate preparations for the debate, students are randomly assigned to 3- or 4-person debate teams. Each team member then prepares to defend either a “pro” or “con” view on a specific debate question that is chosen by the instructor. Students must develop arguments that support the view they are assigned, whether or not they actually support it. The assignment is announced at least a week in advance, so that students have ample time to research the topic and prepare notes they can use during the debate. Any reference materials used while preparing must be attached to the back of the notes, which students submit to the instructor for grading after the debate.

On the day of the debate, the two teams sit facing each other in front of the class. The debate begins with each team member making an opening statement of no longer than 2 minutes, during which initial arguments for the pro and con sides are presented.

All other students become the “audience” and can actively participate by asking questions and making comments. These students are held accountable for the material because questions about the debate topic are always included on the next test.

After opening statements, team members can ask questions of the other team and make arguments for their side. They can also use their notes to refute arguments made by the opposing side. Team members are encouraged to present information based on research rather than simply expressing personal opinions. Grades are assigned based on the quality of the prepared notes and how effectively each team member used this information. At the conclusion of the debate, team members are given an opportunity to communicate to the class which side of the debate topic they actually support and to express their real feelings. This “debriefing” is an important last step, serving a cathartic function for team members and permitting others to state their views more openly.

Choosing the debate topics is usually not a difficult task for the instructor. Newspapers and magazines are good sources, and many contemporary issues easily lend themselves to a debate format. Certain topics generate greater interest than others, and these can be tested over time. The following debate questions have been used successfully by the authors in college courses on gender:

1. Is feminism obsolete?
2. Should men still do such things as open doors for women, stand until a woman is seated, and walk on the outside of the sidewalk?
3. Should women and girls (of any age) be encouraged to participate in beauty pageants?
4. Should research on male pregnancy be encouraged and financially supported by federal funds?
5. Should American females own and use guns to protect themselves from violence?
6. Should women retain their birth names upon marriage?
7. Should use of the RU-486 abortion pill be encouraged for females in the US?
8. Are women in the US given higher status and better treatment than women in other countries around the world?

9. Does outlawing the practice of female circumcision (FGM) in our country contradict our current emphasis on multiculturalism?
10. Do increasing opportunities for women in the military weaken our armed forces?
11. Do First Amendment rights protect songs, movies, art, and literature that encourage violence against women?
12. Should society encourage acceptance of homosexuality and legalize gay marriage?
13. Can a feminist justify sending a child or adolescent to a school that is sex segregated (i.e., all male or all female)?
14. Should women's studies courses like Psychology of Women be included in the college curriculum?

### *Debate Method #2*

Using this method, the instructor first divides the class into groups of 4 to 6 students. Each group is assigned a chapter from the textbook and must choose three possible debate topics related to the subject matter. For each topic, the group also lists three possible argument points and then states whether each point would be a pro or con of the topic of interest. The instructor uses this part of the assignment to determine the debate topics, argument points, and which groups will represent the pro and con sides.

Next, each student prepares an annotated bibliography including summaries of at least five scholarly journal articles related to the assigned debate topic. This part of the assignment holds each student accountable for doing research to prepare for the debate.

The debates are conducted in classic Lincoln-Douglas style with opening statements, argument points, rebuttals, and closing arguments. Each student is responsible for one part of the debate. After closing arguments, the floor is opened to the entire class. Up to this point, students in the audience have been taking notes that they will later turn in for course credit. Once the forum is opened for discussion, the entire class can ask questions and make observations.

The final part of the debate requires each group member to write a post-debate analysis covering the following:

1. Discussion of the topic in general and how thinking may have changed or developed during the assignment.
2. Discussion of the group process.
3. Discussion of one other debate topic (e.g., What was learned? Did anything surprise you during your research of the topic?).
4. Handwritten debate notes.

### *Adapting the Debate Method for Classroom Needs*

The two methods described here can be modified to suit the individual needs of the specific class and instructor. For example, Richard Light (2001) of Harvard University described a simple debate format he utilizes with smaller classes, in which the entire class is divided into two teams. He assigns a reading for the next class, and students must be prepared to defend one of two

views on a “carefully defined controversy” (p. 49). This activity is then followed by a homework assignment in which students are asked to write a paper supporting the view they did not defend in class.

### *Course Evaluation*

Instructors may wish to make use of an additional course requirement: completion of an anonymous course evaluation at the end of the semester. With an anonymous evaluation, students often feel more free to discuss their likes and dislikes about the course. In the Psychology of Women course taught by one of the authors, this evaluation assignment is required, and students receive points for completing it. On the due date, a student in the class collects typewritten evaluations from the other students. He or she then checks off the students' names on a class roster, so that points can be awarded to those who completed the evaluation.

These course evaluations are a rich source of information for instructors, and students appreciate the opportunity to express themselves in this way. The benefits to students enrolled in courses on gender become clear to the instructor through this type of evaluation. Students often say that discussing gender issues had a great impact on their lives and personal decisions. Many students mention the value of the in-class debate and how it assisted them in learning about both sides of important social issues. They comment that the course provided them with greater social awareness, and that it helped them become more assertive in their own social relationships. As Macalister (1999) pointed out, students enrolled in courses on gender often find and express their own “voices.”

### *In Summary*

College courses on gender provide especially fertile ground for the exploration of timely and controversial topics. The use of the in-class debate provides a format in which such topics can be explored, utilizing research findings and sound intellectual arguments. Students learn the value of a global, interdisciplinary approach to gender, and they learn how information from different academic disciplines can enhance their understanding of course material. Moreover, students are truly challenged when they must develop research-based, intellectual arguments for a view they do not personally support. They are exposed to competing viewpoints on controversial issues and can then make their own decisions about which view makes the most sense to them. Regardless of the specific format, the in-class debate encourages critical thinking and intellectual development in both students and instructors.

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## *Planning a Regional Conference for Teachers of Psychology*

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column in the *PsychTeacher Electronic Discussion List* for September 2004.)

Many psychologists, particularly those who work in the academy, are committed to studying educational processes for both applied and basic purposes. Although conscientious teachers of all stripes hope to make lasting, positive impressions on their students, psychologists are particularly well prepared not just to employ a variety of pedagogical techniques, but to assess their relative merits as well. It is because of our rigorous training in the scientific method, coupled with our disciplinary focuses in such areas as learning, memory, cognition, perception, language, and so on, that Ludy Benjamin (2002, 2003) raised the question: Why is psychology not the science of education?

Many psychologists are interested in learning how best to teach their subject matter and understand the fundamental processes that underlie optimal teaching and learning. One index of this level of interest is the number and variety of Internet-based discussion lists devoted to the teaching of psychology. These often include focused discussions on different sub-disciplines of psychology, as well as exchanges for teachers working at various educational levels (i.e., high school, college).

Another indicator of psychologists’ commitments and contributions to understanding educational processes is the number of teaching-related presentations at international, national, and regional psychology conferences. Although such conferences tend to be broadly focused opportunities to share all kinds of data, significant portions are reserved for exchanging data on and ideas about teaching. Moreover, there are several yearly events around the United States that are devoted entirely to teaching. For example, the National Institute on the Teaching of Psychology has met annually for the last 26 years, and the Society for the Teaching of Psychology (STP) holds a yearly meeting during the American Psychological Association conference. In addition, the STP Web site <<http://teachpsych.lemoyne.edu>> lists 10 other meetings in North America and one in Europe that focus expressly on issues that are of interest to psychology teachers. However, if one of these conferences is not held in your area, you may wish to consider organizing one.

Conferences for teachers are energizing, provide useful ideas, and can help create a great network of dedicated teachers. Recognizing the continued need for a teaching conference in our region, we at Texas Lutheran University (TLU) hosted the Southwestern Teaching of Psychology conference (SWTOP) in the fall semesters of 2003 and 2004, and we will do so again in November of 2005.

This article describes the planning of a conference for teachers of psychology. It reflects ideas obtained while attending SWTOP over the last several years, as well as our recent experiences planning and hosting SWTOP. Depending on the availability of other similar opportunities in

your area, you may wish to focus your conference on a particular cross-section of psychology teachers (e.g., high school psychology teachers, teachers at private colleges and universities, graduate teaching assistants). The basic format that I will present has been successful in serving a blend of psychology teachers who work with students of all ages.

## Costs

First, it is important to know that the event does not have to be costly in order to be successful. Thankfully, there are many good psychologists who are committed to teaching and willing to help. They may be colleagues at other institutions who have teaching-related data and would be willing to present it. It is also common for people to share teaching demonstrations. If someone has a particularly good idea about how to address an issue of importance to teachers—technology, plagiarism, laboratory assignments, and so on—he or she could be invited to share. By welcoming both data based and non-data based presentations, you stand a greater chance of having a successful turnout at your meeting, making it more likely that you will cover the conference expenses and develop sufficient inertia to justify holding the meeting again.

However, rarely in life do things cost less than one anticipates, and the costs associated with hosting a teaching conference are no different. These include expenses for transportation, lodging, and meals for keynote speakers; printing and distribution of promotional materials (planners of SWTOP made exclusive use of email as a means of promoting the conference in recent years; this has met with mixed results, and we will again send printed fliers to psychology department chairs at regional institutions this year); food and beverage trays for use at registration times and during breaks; and miscellaneous other items such as name badges, poster mounting boards, and push pins. Therefore, it is imperative that you establish a detailed budget up front, drawing on the experiences of others who have hosted similar events.

Although certain costs are inevitable, some may be offset if you are able to get a publisher to underwrite part of the conference. A good way to approach this is by working through a publishing company representative, for example, one whose company publishes an introductory psychology textbook used on your campus. Because it is valuable for publishers to have access to teachers who might adopt their books, this relationship can be mutually beneficial. SWTOP has often benefited from publisher support. Last year, a publisher not only covered costs for the keynote speaker (transportation and lodging), it also covered the cost of an upscale reception.

There does not appear to be much additional extramural support available for covering the costs of teaching conferences. Aside from costs incurred by publishers, your only other revenue may well be conference registration fees. SWTOP has, in previous years, charged attendees close to \$100, but waived the fees for presenters. Although this attracted many presenters, it meant that other costs associated with the meeting had to be covered by non-presenting attendees. We opted two years ago to charge everyone regardless of whether he or she made a presentation, but we lowered the cost. We structured our costs such that college and university professors paid \$65, whereas everyone else (i.e., high school and junior college teachers, graduate students) paid \$45. Because we did not have to cover costs for our keynote speaker, we ended up with a positive balance. This approach has been reasonably well received, and continues to be the means by which we cover costs associated with the meeting.

## Calendar

Planning the conference far ahead of time is a necessity. If you ask people to participate or commit to delivering featured presentations well in advance, they are probably more likely to agree. Also, depending on where you hold the event, planning ahead ensures that the particular rooms you wish to use will be available. Do not forget to reserve a reception room or area, a banquet room, and dining space, in addition to the rooms for the conference presentations. The format we have employed has included a mixture of smallish rooms for symposia and brief presentations, as well as a large room for plenary sessions. Securing the space necessary for these events cannot be done too early.

Food and lodging accommodations will require advanced planning as well. It may be financially advantageous to hold the event on a college or university campus, while arranging discounted room rates for participants at a nearby hotel. Depending on your institution's food service (both willingness to prepare meals for your attendees and the quality of what will be prepared), you may opt to have meals on campus or at the hotel. At TLU, we have used our campus food service for all meals. We are simply supplied with vouchers for use in the commons lines and asked to stagger our meal times to avoid the heaviest traffic times for students.

Additional considerations include the length and timing of the event, and whether it will occur on a weekday or weekend. Several issues merit attention when determining when and for how long to hold the event. These include (a) whether attendees are willing to miss classes to attend, (b) whether attendees will attend on a weekend, (c) whether institutional rooms can be made available on week days and/or weekends, (d) costs of lodging and transportation that fluctuate as a function of day of the week, and (e) the schedule of other professional events. Attendance at SWTOP has been best when the event is a 2-day, Friday-Saturday event.

## Format Considerations

Psychologists are accustomed to attending and participating in professional conferences that include invited addresses, symposia, posters, and oral paper presentations. Likewise, this format is appropriate for a teaching conference. Sometimes people will organize symposia on their own and submit plans after a call for proposals. In addition, there is no shame in asking people to work with others who share interest in a given topic. Likewise, asking colleagues to make individual presentations is also an effective way of assuring that you not only get a longer program, but one with a variety of topics.

One addition to the standard format of larger meetings, which is perfectly appropriate at teaching conferences, is a session devoted to teaching demonstrations. When SWTOP was held on the campus of Texas Wesleyan University, the traditional closing session was a plenary session on effective teaching demonstrations called "Live from Fort Worth." The use of demonstrations can spark ideas for pedagogical research as well as ideas for the development of new demonstrations. Beginning teachers are especially appreciative of these sessions as they provide new ways of adding diversity to their daily teaching plans.

## Final Note

Although it takes a tremendous amount of work to organize such an event, planning a successful conference can be very rewarding. Draw on whatever resources you can as you embark on this meaningful activity. By the time you have made arrangements for the use of space, preparation and serving of meals, delivery of multi-media equipment, and so on, you will likely have enlisted the help of people including custodial and food service staff, the registrar, your faculty colleagues, and highly motivated students wishing to contribute to the event's success.

There is no better teacher than experience. If you sense that psychologists at institutions in your area would welcome a teaching conference, go for it! Keep good notes on how you managed the tasks, and by all means seek evaluative feedback. The "regulars" at SWTOP have elected for a pattern whereby a given institution hosts the conference for a couple of years in a row before handing it over to others. The greater the number of people interested in supporting the conference, the more success you will have each year.

Finally, if you wish, please visit our conference Web site to track the development of the 2005 SWTOP conference. The URL is

<<http://www.tlu.edu/academics/psychology/conference/swtop.html>>

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*The Water is Wide: Lessons on Teaching from a Popular Novel*

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column in the *PsychTeacher Electronic Discussion List* for October 2004.)

As teachers of psychology, we rely on resources that assist in course preparation and teaching (e.g., journal articles, books, Internet discussion lists, workshops, conference presentations). Last spring, I discovered an unconventional, yet invaluable, resource: a popular novel entitled *The Water is Wide* (Conroy, 1972). This autobiographical story, which takes place in the late 1960s, describes how the author spent a year in the southeastern United States teaching disadvantaged islanders.

In the novel, Conroy, a recent college graduate, accepts a position teaching reading and writing to 6th and 7th graders. The students reside in a black community, isolated since the Civil War on a barrier island near Savannah, Georgia. Most of the Yamacraw Island citizens never visited the mainland because, at the time, there was no bridge spanning the small slip of ocean between the two land masses. Consequently, the community was isolated from the rest of Georgia.

In the wake of the civil rights movement, the board of education made only meager attempts to provide the islanders with an education, which translated into few funds for decent materials and quality teachers. In addition to low resources, there were strains of regional racism, low expectations of the students by teachers, and a lack of administrative support. Worse, previous teachers typically spent the hours of the school day applying corporal punishment to manage unruly behavior. As a result, all 18 students in Conroy’s class were illiterate and blissfully unaware of current events, such as the Vietnam War and who served as President of the United States.

The formidable water that few in this novel dared to cross serves as a literal barrier to education for the students on Yamacraw Island; a similar metaphorical barrier between teacher and students may exist in the college environment, especially in rural communities. On occasion, it might strike faculty members that the majority of their students have beliefs and world views that diverge substantially from their own. Typical students attending universities in their hometowns tend to be heavily influenced by hometown values (Kraut & Lewis, 1975). Students from rural settings, for example, may endorse values consistent with conservative political ideologies and values (Chow, 2000; Suedfeld, Steel, & Schmidt, 1995) that diverge from the more liberal views often endorsed by faculty (Lipset, 1982).

Returning to our literary example, in the face of the ostensibly impossible Yamacraw Island situation, Conroy adopts a “save the world” approach in his initial teaching efforts, with strong determination to teach students to read and write. His students seem unwilling, unprepared, and unconvinced that they can learn skills and content that do not relate to their fishing village lifestyle. After a valiant but unsuccessful effort, Conroy adapts. He changes his approach and

focuses more on changing the students' world views. He fights the administration (and nervous parents) for permission and resources that will expose the children to a world beyond the island, one that carries with it many opportunities. This "real world" experience includes taking students trick-or-treating on the mainland (to illustrate cultural diversity and rituals of other people), to a Harlem Globetrotters game (to build students' confidence by showing successful black men idolized by white people), and on various field trips, including a trip to Washington, DC (for history lessons and exposure to urban lifestyle).

Fortunately, disparities between the teacher and students typically are not this grand in scale. However, disparities do exist and may become evident during classroom discussions or when questions arise. For example, students enrolled in a psychopharmacology course may vehemently argue that individuals who abuse drugs do so because they are immoral or weak-willed. Therefore, it might be the goal of the teacher to get students to think critically and objectively about drug use (e.g., to understand the conditions under which drug abuse occurs, and to realize that morality and personal strength will have little to do with it). Although this conceptualization may seem straightforward to the teacher, students often are hearing this information for the first time, and as a result, may be resistant to it. The water indeed may be wide.

Nevertheless, we can learn how to bridge the water by examining young Conroy's experiences with the Yamacraw students. Conroy illustrates that the students' ability to relate to the teacher is only as good as their own experiences. One particular dialogue between Conroy and his students on cultural differences nicely illustrates this point: Students in his classroom humorously discuss an incident in which a neighbor of some of the students shot his pet cat for stealing food, a situation that Conroy finds shocking. In response, he spends a substantial amount of time trying to convince the children that shooting a cat for "being a cat" is cruel and unacceptable. The students argue persuasively that food is not plentiful and the cat was a possible threat to the neighbor's viability. They also make other excellent points that he finds difficult to defend. Conroy ultimately gives up—his students are unable to relate to his view (and him to theirs).

When views diverge substantially, a teacher's rigid endorsement rarely leads to changes in students' perspectives. By contrast, a teacher's awareness of this divergence and a willingness to start at a point where students can relate may lead to meaningful change. For example, in a psychopharmacology class, it might be useful for students to discuss the conditions under which individuals use or abuse drugs. Rather than immediately dismissing views that are not empirically supported or theoretically sound, it might facilitate change to work each explanation into a lecture across the semester. For example, when discussing research that shows that having few alternatives in life increases the chances of drug abuse, teachers might point out that labeling individuals in these circumstances as "immoral" adds little to the explanation of why abuse occurs.

Another lesson illustrates a primary goal of teaching—to better prepare students for the real world. Conroy abandons his goals of teaching culturally irrelevant topics, such as reading and understanding literature, and instead, focuses on a deep-seated cultural belief that water is dangerous. The children had been taught that the sea is evil and unpredictable and that they

should avoid entering the water. As a result, they were never taught to swim, a situation that could have devastating consequences for an islander. Conroy decides that teaching the skill of swimming (to those whose parents approved) would be one of the most useful skills an islander could learn.

Like Conroy, teachers sometimes place too much emphasis on content and forget another important goal of teaching: to help students acquire skills that will enable them to obtain jobs or enter into graduate school and succeed in those endeavors. Content is important, but so are skills. The budding psychology major, for example, needs skills in oral and written communication as well as skills in conducting research and analyzing data. Whenever possible, teachers should attempt to hone these skills, too.

Good teaching also entails challenges, which should be accompanied by reasonable expectations. Some teachers (such as Conroy) have ambitious goals that reach beyond the learning of content and include, for example, the expansion of their students' world views. A specific goal might be to teach tolerance of racial differences or alternative lifestyles. Although this is a noble goal, teachers should keep in mind that it is difficult to change an 18-year history during a 16-week semester. Progress and success in teaching need to be defined realistically, always remembering that one person has a limited capacity for profound impact. Perhaps students' world views may not change when they take a social psychology class, but they might be able to better understand the perspective of another group of people as a result. Teachers might be content merely to push students in the general direction of a world view change by teaching them one particular skill (e.g., perspective taking) and hoping for meaningful long-term effects.

If you are reading this essay, chances are good that you are trying to improve your teaching skills. But to what end? Conroy concludes the novel by stating, "Of the Yamacraw children I can say very little. I don't think I changed the quality of their lives significantly... For them I leave a single prayer: that the river is good to them in the crossing" (p. 242). For all of our hard work, we never know for sure if our efforts have been fruitful beyond test scores. We may assume because we hear little from the students, that nothing we have done has changed them. But consider your own experiences. How many teachers made significant impressions that influenced your academic decisions but never benefited from your positive feedback? Perhaps we can be content in knowing that we do our best to bridge the water, even if we do not know the long-term outcome. In addition, we can hope that what we teach our students is relevant and useful to their lives both inside and outside of the classroom.

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*The Graduate Student Teaching Association*

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column in the *PsychTeacher Electronic Discussion List* for November 2004.)

Most of us know the nervousness and uncertainty that can come with teaching one’s first class, an experience that can be both exciting and anxiety-provoking (McKeachie, 2002). Although the intensity of these initial emotions is often ephemeral in nature, graduate student teachers eventually face the equally (or more) daunting task of searching for a job. Thus, graduate students in the teaching of psychology can benefit from a support network that provides teaching resources and information helpful for the academic job hunt. The Graduate Student Teaching Association (GSTA) is one such network that hopes to assist graduate students in their present teaching endeavors as well as provide support as they pursue careers in the teaching of psychology and elsewhere. Now in its 3rd year, the GSTA is the graduate student organization of the Society for the Teaching of Psychology (STP), Division 2 of the American Psychological Association (APA). The purpose of this essay is to introduce readers to the GSTA and provide an overview of the organization’s goals, which include (a) increasing the GSTA’s visibility, (b) emphasizing the importance of graduate student teacher training, (c) maintaining the organization’s Web site, and (d) developing a mentoring program for graduate student teachers.

*Increasing GSTA’s Visibility*

Many psychology graduate students are likely unaware of the GSTA. Therefore, increased visibility will allow the GSTA to reach and assist more of these students. In order to accomplish this goal, the GSTA hopes to increase its representation at various regional APA conferences. Establishing a network of “at-large representatives” will serve as an important recruiting and informational tool.

The GSTA also hopes to expand its conference-related activities. For example, at the 2004 APA conference in Hawaii, the GSTA sponsored a symposium on scholarship in the teaching of psychology. At future conferences, the GSTA will sponsor and organize symposia and workshops relevant to the training and advancement of graduate student teachers. In addition, several established teachers of psychology have volunteered to give presentations designed to help graduate students find jobs at liberal arts colleges. This is a crucial issue for graduate students, because the majority of academic jobs are at smaller schools.

A further purpose of the GSTA is to act as an advocate at the national level for the interests of graduate students. In this capacity, the chair of the GSTA has an active presence in the executive committee of STP and acts as a voting member, ensuring that the interests of graduate students are represented in the policies of the division.

### *Emphasizing the Importance of Graduate Student Teacher Training*

Another focus of the GSTA in the coming years will be to emphasize the importance of providing graduate students with quality training, support, and supervision in the teaching of psychology. This is important for two reasons. First, many schools have graduate students working as teaching assistants (TA), who hold office hours, grade papers and exams, lead review sessions or labs, and even give lectures (Mueller, Perlman, McCann, & McFadden, 1997). Because TAs are intimately involved in the workings of most universities, it is imperative that they be adequately trained in these roles. However, many graduate TAs are not adequately prepared for their first teaching experience (Meyers, 2001; Prieto & Meyers, 2001). In fact, many graduate student teachers do not receive any TA training before undertaking their teaching duties (Buskist, Tears, Davis, & Rodrigue, 2002; Lowman & Mathie, 1993; Lumsden, Grosslight, Loveland, & Williams, 1988; Meyers & Prieto; 2000; Mueller et al., 1997).

A lack of adequate training can have negative consequences for both teachers and students. For instance, graduate students who do not receive adequate training in the teaching of psychology may lose interest in pursuing a teaching career because of a lack of guidance and resources when difficulties are encountered in the classroom (Prieto, 1995, 2001). In addition, the students of inadequately trained TAs may have suboptimal classroom experiences, making it less likely that they will be prepared for more advanced coursework (Prieto, 2003).

For graduate students who do receive formal training, the most common methods for training new teachers include (a) having them observe more experienced teaching faculty, (b) using student evaluations as feedback, and (c) holding pre-semester orientations on effective teaching (Mueller et al., 1997). However, formal coursework on teaching and direct faculty supervision of student teachers are still relatively rare (Mueller et al., 1997). As such, the GSTA is interested in promoting the increased use of direct supervision and coursework as means of training new psychology teachers.

A second reason for providing graduate students with quality training in the teaching of psychology is that teaching experience is important as it pertains to obtaining an academic position. Despite their apparent lack of training, many graduate students searching for academic jobs seek teaching positions. In a survey of former job applicants, Perlman, Konop, McFadden, and McCann (1996) found that most applicants had a strong interest in teaching and rated teaching opportunities as more important than research opportunities when choosing an academic position. Moreover, search committees view previous teaching experience as vitally important when choosing among applicants. Benson and Buskist (in press) surveyed search committees hiring new faculty members and found that exhibited excellence in teaching was a key factor when deciding which candidate(s) to hire. As such, Benson and Buskist suggested that getting as much teaching experience as possible is pertinent for graduate students seeking academic positions.

### *Maintaining and Upgrading the GSTA Web Site*

The GSTA maintains a Web site <<http://www.uakron.edu/gsta>> designed to provide helpful resources for graduate student teachers. Graduate student teachers who need to find information for their courses, such as lists of class activities or sample syllabi, can turn to the Web site for assistance. Currently, the Web site features links to sites on classroom assessment, the history of psychology, and personality activities and demonstrations. Furthermore, in the future, the Web site will contain helpful career information, such as how to build a curriculum vitae. In addition to providing resources for graduate students, the GSTA Web site also serves as a centralized location where various types of information can be stored and easily accessed. In short, the GSTA's Web site is helpful because graduate students can benefit by having access to a single site that contains a collection of useful teaching-related information.

### *Developing a Graduate Student Mentoring Program*

The GSTA is hoping to develop a faculty-graduate student mentoring program in the teaching of psychology. The typical mentoring relationship, which usually focuses on research skills, provides many benefits for graduate students—acculturation into academia, assistance in defining career aspirations, and access to professional networking opportunities, to name a few (Baiocco & DeWaters, 1998). Because many faculty research advisors place more emphasis on research than teaching, they may be less supportive of a teaching career. In addition, many faculty research advisors may be unable to adequately advise their students in pursuing teaching-related interests or may receive few rewards for serving as a teaching mentor. Consequently, they may approach this role with relative indifference (Erickson & Strommer, 1991). However, many graduate students wish for such a relationship. Kalivoda, Sorrell, and Simpson (1994) found that new faculty listed seeking advice from a teaching mentor as the second most common approach to solving teaching-related problems. Also, the esteemed Dr. Charles Brewer noted that receiving exposure to different teaching styles and, in particular, connecting with an effective teaching mentor are excellent ways to develop a personal teaching identity (Saville, 2001). Thus, a mentoring program in the teaching of psychology would be beneficial to many graduate students. The GSTA is currently considering inviting several established teachers of psychology to be temporary members of the GSTA Internet discussion list and to serve as faculty mentors, thereby giving graduate students access to knowledgeable and experienced teachers. Finally, the GSTA is sponsoring a roundtable discussion on excellence in faculty-student mentoring at the 2005 APA convention in Washington, DC.

### *Conclusion*

Despite being a relatively young organization, the GSTA is establishing itself as a prime resource for graduate students. Ultimately, the GSTA hopes to become a nationwide network of interested and motivated graduate students dedicated to advancing the teaching of psychology. The GSTA is currently developing its infrastructure to serve its members more efficiently by creating an executive committee. The executive committee will consist of a treasurer, a communications editor, and possibly a secretary as well. Joining the GSTA is simple: Any graduate student belonging to STP is eligible to join. In sum, we hope that the GSTA can provide useful information for students new to the teaching of psychology as well as students who are

more established and on the verge of embarking on a teaching career. In addition, we hope the GSTA can provide information for faculty with students who may be interested in learning more about the teaching of psychology.

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*Advanced Placement Grading: Lesson Learned*

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Teachers of psychology often complain that it is very difficult to grade essays effectively and consistently (e.g., Nodine, 1999; Zlokovich, 2004). Although graduate student teachers often spend considerable time discussing effective classroom techniques, they typically spend less time learning to grade effectively. Moreover, although future teachers often learn that there is more than one way to grade essays and that each person should determine what works best for him or her, we have found that applying this knowledge is sometimes difficult. When we began grading exams for Advanced Placement (AP) psychology, it became clear that the method by which we normally graded essays may not have been the most efficient or effective. In this essay, we briefly describe AP grading, our experiences as AP readers, and the impact AP grading has had on our ability to evaluate our students’ work.

*AP Grading*

Students who have completed AP courses in high school take their AP exams in May. All AP exams follow the same general format, with the AP Psychology exam consisting of 100 multiple-choice and 2 essay questions. The College Board brings together a group of high school and college psychology teachers to hand-score the essays. Although the AP reading has been held at various sites around the United States, it has been held in Daytona Beach, Florida, for the past 4 years.

A leadership team consisting of approximately 20 members arrives early and prepares a scoring system, or rubric. Rubric development is a difficult process. The team starts with a generic scoring guide provided by the test development committee. Next, the leadership team uses textbooks, their experiences, and sample student responses to craft a scoring guide that is easy to understand and apply.

When the readers arrive, they receive 1 day of training with the rubric, which teaches them to grade essays consistently, a very important task given that, in 2004, readers graded over 72,000 booklets, each containing two essays. Upon completion of the training, readers then score essays from 8:30 a.m. until 4:45 p.m. each day. During this time, they are constantly monitored by table leaders who check to make sure they are scoring according to the rubric. Although grading may sound as though it would be difficult, we have found it to be one of the most rewarding experiences of our careers.

## *Our Experiences*

*Chris Hakala.* My first exposure to grading essays was as a graduate student at the University of New Hampshire (UNH). I was enrolled in a teaching seminar taught by Victor Benassi, winner of the 2003 American Psychological Foundation Award for Teaching Excellence. The graduate program at UNH is well known for preparing its students for careers in academia, and I was thrilled to learn the “tricks of the trade.” During the seminar, we learned about reliability and validity as it applied to testing and assessment, and Victor described techniques that would assist in teaching and grading. For example, we learned that student essays should be scored blindly to avoid bias, and that, as faculty, we need to ensure that all students are treated equitably. After graduation, I took this knowledge with me and believed that I was well versed in the ways of student assessment. After all, I had read McKeachie’s (2002) *Teaching Tips* as well as work by Lowman (1995) and others.

In 1996, I attended the Northeastern Conference of Teachers of Psychology hosted by Barney Beins at Ithaca College. At the time, I was interested in high school psychology and had recently conducted a study demonstrating that college students who took high school psychology fared no better in an introductory psychology course than those who had not. After presenting these data at the conference, I was met by a small but angry group of talented high school teachers who questioned my results. Fortunately, I was also approached by Jane Halonen, who, after seeing my interest in high school psychology, told me about AP grading. After learning more about it, I applied to be a reader.

My first reading was in 1997, and it was quite an experience. To begin with, I arrived late at Clemson University, where the reading was held. Then, at my first training session, I was paired with Dr. Charles Brewer. Needless to say, I was scared, intimidated, and convinced that this would be my first—and last—AP reading.

Ultimately, however, it turned out to be a great experience. Although I learned much during that first reading, the most important thing I learned was the strategy that the College Board and Educational Testing Service (ETS) use to carry out the scoring of a large number of essays. In my years of teaching, I have often struggled with the idea that I was somehow grading essays inefficiently. Further, I often found my mind drifting while I graded them. That is, I graded essays differently as the pile got smaller. I was amazed at the organization of the AP reading and the way the College Board and ETS worked to ensure reliability and validity. The goal, of course, was to provide students with a fair, unbiased reading of their essays, and the entire grading process was designed with that goal in mind.

The process of using a rubric to score the essays along with continuous reliability checks was useful and gave me confidence that I was grading my essays effectively. Over the years, I have tried, with mixed success, to adapt this process to grading essays in my courses. Although using a rubric is wonderfully helpful and I have found that it makes grading essays much easier, adapting the other parts of the reading (e.g., conducting reliability checks) is more difficult. The reading, however, has taught me that scoring can be made much more objective if I attempt to adapt these processes the best I can.

*Rob McEntarffer.* My experience mirrors Chris's in some ways, but I have viewed it from a different perspective: as a high school teacher rather than a college professor. In my teacher-training program, a very small amount of our coursework covered the topic of assessment. In fact, most of what I learned about classroom assessment was from other high school teachers. I was never taught how to write clear exam items, examine the reliability or validity of those items, or grade student essays.

Then, in 1996, I was invited to be a "rescue reader" at that year's AP grading. One of the other AP readers could not attend, so I was flown in on the second day of the reading and arrived late at night. The next day, I was late for the opening meeting. As I walked in front of the other readers, I heard a kind, southern voice (Dr. Charles Brewer) say "Oh, I see they're inviting high school students now." Although I quickly became friends with Charles and the other readers that year, it was nevertheless a new and somewhat intimidating world to me. Up to that point, I had never thought about the issues integral to AP grading, including how to assess students' knowledge fairly and quickly from their essay responses.

That year, I learned what a clear and complete rubric looks like and its importance for accurate essay grading. Before we started grading, we discussed in detail what to include in the rubric. This process forced us to identify the essential elements that would demonstrate knowledge of a psychological concept. For example, if students said that spontaneous recovery occurs after a response becomes extinct, we discussed whether this answer was sufficient, or whether it was necessary for them to state that a time period must elapse after extinction before the behavior reoccurs. I now construct my own grading rubrics by asking: What essential elements of the concepts do I expect my students to know?

I also learned how important reliability and validity checks are for consistent grading. I was, and continue to be, impressed with the reliability checks built into the AP grading process. I appreciate how each student's essay is considered carefully and how reliability data help ensure that each reader is held to the same standard of grading. Although circumstances prevent me from applying each of these standards to my own grading, I make sure I grade each essay anonymously, and I re-grade some essays to ensure that I am consistently applying the rubric.

Finally, I learned how careful training and hard work on a grading rubric can actually minimize the time spent grading. At first, the thought of grading a huge stack of essays in a week was daunting. Now that I have "become one with the rubric" (the mantra of AP readers), I am in a position to grade essays more effectively and efficiently.

### *In Conclusion*

AP reading has been a terrific experience for both of us. We believe we are better able to score essays and provide students with fair and unbiased feedback on their performance and understanding of material. Teacher training programs would do well to consider the work of AP reading as a model for helping future teachers develop the skills necessary to evaluate material fairly and consistently.

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## *Biographical Notes on Individual Contributors*

**Gil Clary and Andrea Olson.** The **College of St. Catherine** contributions to this essay, along with the course revision, were prepared by all members of the department. The following lists each faculty member, her or his area in psychology and years of teaching experience: Gil Clary (social, 24 years), Joanne Floyd (developmental, 20 years), Andrea Olson (industrial-organizational, 3 years), David Schmit (developmental, history, 15 years), Lynda Szymanski (clinical, 6 years) and Tom Thieman (experimental, 27 years). In addition, the following student laboratory instructors, past and present, have contributed significantly to this work: Beth Arteaga, Andrea Schneider, Kari Trad, Katie Zaaft, Meghan Texley, Kelly Rank, Courtney Kellerman, Audra Faiola, Ana Fernandez, Abbe McGray, Ehlan McNear, Katherine Fines, Mellisa Gadwa, Liz McMann, Deb Ruymann, and Karalyn Snyder. Finally, the course revision described here was funded by a NSF Course, Curriculum, and Laboratory Improvement grant.

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**Stephen L. Chew** is professor and chair of psychology at Samford University in Birmingham, Alabama. He received his PhD in experimental psychology from the University of Minnesota. He received the Buchanan Award for Classroom Teaching Excellence from Samford and the Professor of the Year award for Alabama from the Carnegie Foundation for the Advancement of Teaching. In 1998, he was chosen as a Carnegie Scholar as part of the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL). He has been a speaker and workshop leader at

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**Peter J. Giordano** has been on the faculty at Belmont University since 1989 and is currently chair and professor of psychology. He received his BA, MA, and PhD (Clinical) from the University of North Carolina at Chapel Hill. If he could snap his fingers and make a childhood dream come true, he would play basketball for UNC-CH. He is a past National President of Psi Chi and served as the Methods and Techniques Editor for *Teaching of Psychology*. Most importantly, he is the husband of Jan and the father of two fine sons, Nicholas (age 18) and Michael (14), who are growing up way too fast. He thanks the following students who have helped his thinking in this area and have assisted in data collection and coding: Kelly Voss, Emily Sheffer, Kristen Moore, Angela Strahan, and Marcie Schroeder. Finally, he also thanks his teaching friends who have shared their stories with him in conversation or e-mail.

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