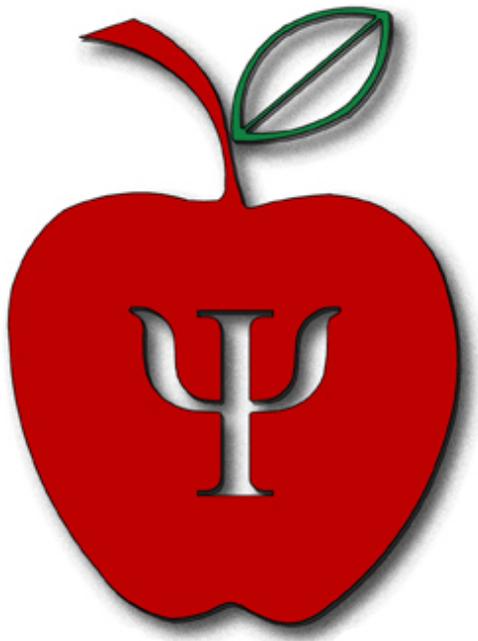


Essays from E-xcellence in Teaching Volume XIV

A collection of essays originally published on the
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Introduction

This year's volume of *E-xcellence in Teaching* contains invited essays originally published on the Society for the Teaching of Psychology's (STP) PsychTeacher listserv. The listserv has provided a forum for discussion of issues related to the teaching of psychology at all levels, since its launch in 1998. STP has featured the *E-xcellence in Teaching* essay series on the listserv since the spring of 2000. This year's essays present both practical strategies and food for thought on a wide range of topics.

Several of this year's essays focus on the role of teaching introductory psychology classes. For example, in chapter 3, Kelly Bouas Henry shares a set of observations comparing student performance on quizzes associated with either standard "active learning" or "lab activities" in two sections of Introductory Psychology. Results show an improvement of quiz performance by one grade level when the quiz was associated with a lab activity as compared to a more standard "active learning" exercise. Stuart Levine and Andrew Gallup describe a pedagogical implementation in which they integrated first-person narratives of the background and contributions of as many as ten eminent psychologists into one of four Introductory Psychology courses, in chapter 6. They offer suggestions for alternative methods of such enhancement and for providing similar historical exposure in introductory courses.

Dana Leighton, in chapter 9, talks about how stimulating enthusiasm for science is critical to developing knowledge and confidence in research skills. This article describes the process he uses to integrate psychophysiology laboratory experiences into the introductory psychology curriculum. Rebecca Singer discusses dual-credit college courses which enroll high school and college students in chapter 12. Many high school students lack engagement with the material or lack necessary critical thinking skills to successfully complete a college course. To ameliorate this problem, she modified the curriculum of one general psychology course to include a combination of twenty-five assignments designed to engage students in application, analysis, and evaluation. These were presented as an activity packet titled "Academics in Action".

Other essays in this volume provide specific, practical strategies for undergraduate writing. In Chapter 2, Traci Giuliano describes three strategies for teaching writing effectively in a first year seminar course. First, she teach students the "They Say/I Say" approach, in which writers "enter a conversation" by framing their arguments as a response to others' views. Next, she asks students to complete an online plagiarism tutorial and an additional plagiarism test. Finally, she provides students with detailed guidelines and checklists for assignments, including annotated examples of previous student work. Kimberly Christopherson, in chapter 7, introduces two different genres of writing (popular press writing and APA research report writing) in an attempt to help students differentiate audience and evaluate the effectiveness of a genre for a particular audience. She found that students were able to identify why the writing styles differed between these two genres by the end of the course.

Additionally, some essays address specific pedagogical strategies to improve student learning. Kristel Gallagher, in chapter 1, shows how students benefit from the inclusion of salient information from lecture in test questions. The addition of a retrieval cue helped students perform better on tests. When students were cued to stories in test questions, students were

given an additional opportunity to demonstrate their learning. In chapter 11, Gary Grady broaches the topic of creativity in teaching. He suggests that the study of human behavior demands critical thinking, so teachers of psychology must be among those who are committed to developing the creative aspect of critical thinking in their students.

Melissa Beers, Jessica Hill, and Clarissa Thompson offer suggestions on how to implement a teacher-training program that balances both the practical and pedagogical aspects of teacher training, in chapter 4. Their research suggests that graduates and faculty value similar skills for first time instructors, though their priorities seem to be slightly different. Graduates focus on survival skills while faculty focus on reflecting on teaching in order to improve it. In chapter 5, Bethany Fleck and Anna Ropp discuss the reasons for obtaining IRB approval for a Society for the Teaching of Psychology project. They outline a few of the ethical issues that exist with the IRB, such as students having the right to anonymity and/or confidentiality and distinguishing what assignments or activities students complete for the class and what students complete for a research project.

In chapter 8, Jessica Hartnett, Luke Rosielle and Lori Lindley describe the experiences that several faculty members had during their first year of administering a Facebook Group for an undergraduate psychology program. The essay includes ideas on how to best use a Group to share and create a repository for major-related information, encourage positive (and appropriate) faculty-student interactions, cultivate departmental culture, stay in touch with alumni, and stimulate intellectual curiosity. Vivian Milczarski and Amanda Maynard highlight the importance of psychological information literacy (IL) in undergraduate education in chapter 10. They describe an incremental approach to teaching IL skills using a case study technique as well as some strategies for successful implementation in an effort to enhance students' IL skills.

Together, these essays make up Volume XIV of *E-xcellence in Teaching*. We hope our readers find both thought-provoking ideas and practical teaching help in these essays. We thank the contributors for sharing their experiences and ideas with the readers of PsychTeacher, and with the rest of the psychology teaching community.

William Altman
Lyra Stein
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Chapter 1

Retrieval Cues on Tests:

A Strategy for Helping Students Recall Information?

Kristel M. Gallagher

Keystone College

What do Lilo and Stitch, your mother-in-law, Santa Claus, the Big Bang Theory, and my niece have in common? If you guessed “nothing”, you’re wrong. While on the surface they may seem completely disconnected, in the classroom they can serve as potentially valuable tools to help our students perform better on tests. We all know that students struggle to recall information on tests, often stating they “knew” it but just couldn’t get it out on the test – a retrieval failure if you will. The retrieval of information may, therefore, be seen as a roadblock to student success in the college classroom. But what happens if we provide students with a way to help them access that information from their memory on tests? I propose that a small, but relatively simple, adjustment to the wording of our tests could help many of our self-proclaimed “poor test-takers” retrieve the information they need to perform better on tests.

To put things into perspective, I want to tell you about a transformative experience I had as a new instructor of psychology. Simply, I gave my first test. Perhaps you also remember the first time you finally got to be the one giving the test, instead of the one taking it. What I remember most profoundly were the mixed feelings of excitement, shock, and then a little bit of horror as I began grading this first-ever test. I was teaching a course on the development of gender, around which time my first niece had, conveniently for the topic I was teaching, just been born. My niece all of a sudden became the center of our class discussions on the course material. I was reveling in being an aunt and I loved being able take the material and turn it into an elaborate story involving my interactions with my niece. I expected my students to enjoy the stories, but what I didn’t expect was that they would recall the stories, often in great detail, on their first test. And in even greater detail on their second, third, and fourth tests.

This experience shaped my development as a teacher and sparked my pedagogical curiosity. I was skeptical that students were gaining anything at all from my lectures, let alone listening to them. But then appeared a timeline of the gender role development of my niece on my students’ test papers. I shook my head and asked myself, how did this happen? Why did this happen? And most importantly, how could I use this to help my students?

What Do Memory Researchers and Cognitive Psychologists Say?

As it turns out, I didn’t, as a first-time graduate student instructor, stumble upon a Nobel Prize worthy discovery. Cognitive psychologists have long known about the powers of elaborative processing, the generation effect, dual coding, state- and context-dependent learning, and the spacing effect to enhance memory (see Tigner, 1999 for a concise review). The memory research conducted by cognitive psychologists has been influential in directing the establishment of best practice guidelines for the educational system, yet much of this research

has not influenced the regular classroom practices of either instructors or students (Roediger, 2013).

This lack of practice may be fuelled by the way we think about learning on the whole. When thinking about learning, we often think about the process of acquiring or encoding information into our memory system. Far less thought is given to the process of retrieving that information from memory. Retrieval is most often viewed as a mere assessment of learning, rather than an actual part of the learning process. Of course, this one dimensional view of learning has been challenged by cognitive psychologists in recent years (Karpicke, 2012). Roediger (2000) suggests that the retrieval of information must also be considered when examining the concept of learning.

Retrieval Cues

Retrieval is the act of taking memories out of storage and bringing them to the forefront of consciousness (Feigenbaum, 1961). Retrieval cues, then, are things that help you access these memories. For example, imagine you are out to dinner and run into an acquaintance while waiting for your table. He says hello, asks how you've been, and proceeds to tell you about the outstanding dinner and delectable dessert he had with his wife the last time he ate at this particular restaurant. Although you are certain you know the man, you cannot remember his name or where you know him from. You converse with the man to avoid embarrassing yourself, desperately seeking any clue to his identity. As the man pulls out his cell phone from his pocket to check the time, you notice the phone has a large crack down the left side of the screen. An image pops in your head of the time when you dropped your phone while fiddling for your keys in the parking lot of the gym and your screen shattered. You suddenly remember the man you are talking to is the instructor of the self-defense course you took recently. Here, the crack on the man's cell phone screen served as a retrieval cue.

Retrieval cues can be external, such as smells or sounds, or internal, such as feelings. Research in a variety of contexts has shown that the presence of these cues can make recalling memories easier. Importantly, the best retrieval cues are those things that are encoded at the same time the new information is stored in memory (Tulving & Osler, 1968). The classic research on state-dependent learning, whereby sober or intoxicated medical students studied and then had to recall various information in a sober or intoxicated state (Goodwin, Powell, Bremer, Hoine, & Stern, 1969), demonstrates the power of one type of retrieval cue on memory for newly learned material.

Words as Retrieval Cues

A less risky type of retrieval cue, simple cue words, works equally as well to enhance memory for new material (Tulving & Osler, 1968). Imagine being asked to remember the word "stomach." You are given a study guide that contains the word "stomach," as well as two cue words – "empty" and "hurt." You feverishly study the guide and then you are tested on your memory. It turns out that you are much more likely to recall the word "stomach" when you see the cue words "empty" or "hurt" on the test than when the cue words are not present on the test. These loosely related words assist you in accessing an already formed memory. Without

them, the potential for a retrieval failure, or the “I-knew-the-right-answer-but-couldn’t-get-it-out-on-the-test” phenomenon, is significantly increased.

Outside of the lab, little research has explored the use of retrieval cues in an applied educational setting. The use of chapter headings as retrieval cues has been studied and yielded mixed findings (Perlini, Lind, & Zumbo, 1998; Tulving & Pearlstone, 1966). But what about more specific, question-level retrieval cues? I would argue that using a broad chapter heading as a retrieval cue for a set of questions does nothing more than allow students to center themselves in one area of the material being tested. But I wondered if embedding retrieval cues in the test questions would be a more effective strategy for helping students recall information. When trying to recall the definition of ‘stimulus generalization’, for example, would it be helpful for my test question to mention my cats (Lilo and Stitch) who were the basis for my explanation of the term in class? I decided to examine this idea in my introductory psychology course.

Can Retrieval Cues Help Students on Tests?

My initial thought was that I could simply compare a sample of my test questions that included embedded retrieval cues to a sample of my test questions that didn’t. About half of my test questions include some form of a retrieval cue, so this comparison would have been easy. However, I realized the problem with this approach was that it could potentially be an apples-to-oranges comparison in the sense that the retrieval cue questions tend to come from the pieces of lecture that I expand on (typically by making a joke, telling a story, showing a video clip, or having students engage in a class activity). Comparing questions about these concepts to those that I didn’t spend as much time on would create an obvious experimental bias.

What I decided to do instead was only focus on the questions that included a retrieval cue. I developed two versions of these questions. The first version was the original question that included the embedded retrieval cue. The second version was identical, except that I cut out the retrieval cue from the question. Here are a few examples (with the retrieval cue in brackets):

- Why was the perspective followed by Wilhelm Wundt [pronounced in a terrible German accent by Dr. Gallagher as *Vill-helm Vunt*] and his followers called structuralism?
- In Piaget’s theory, the stage of cognitive development in which a child becomes capable of logical thought processes [and usually figures out Santa might not exist] is the _____ stage.
- [“If you give a mouse a cookie, he’s going to ask for a glass of milk.” We read this story in class to illustrate what is meant by a cause-effect relationship in science.] The process of establishing causal relationships is associated most with_____.

When I mixed the two versions of the questions throughout my first quarterly exam and compared overall averages for the retrieval cue version of the questions to the non-retrieval cue version, I found that students’ grades were significantly higher overall for the retrieval cue questions. In the version of the questions with retrieval cues, student grades averaged 81% (a B-). Identical questions without retrieval cues averaged only 76% (a C). In fact, I found the difference was significant ($p = .036$) in a paired sample t-test. Yes, the difference is only about

half a GPA point. However, I can attest that even at the college level, students would much rather take home a B- grade to Mom and Dad than a C grade.

Can You Do This in Your Course?

Indeed, it appears that students do benefit from the inclusion of this additional, perhaps more salient information from lecture in test questions. If we assume that our students have correctly encoded and stored the course material before a test, this relatively simple addition of a retrieval cue could help students perform better on tests. There is no unfair advantage given to students here, nor a need to worry that we are watering down our tests by including these cues. If a student has never encoded or stored the information required to answer the test question, a retrieval cue will do nothing more than force the student to spend more time reading the question. Retrieval cues will only benefit those students who actually have the answer stored somewhere, but truly can't seem to get it out on the test.

So why not give it a try on your next test? I know I can safely assume that you're reading this essay because you have some interest in helping your students succeed. I also know that as teachers of psychology, we are always enhancing our lectures by telling stories, incorporating popular media, and maybe even acting foolish. We do this in an attempt to get our students to better understand and connect with the course material. If we went one step further and cued students to these stories in our test questions, we may give students an additional opportunity to demonstrate their learning.

Taking it One Step Further

Importantly, we may also be teaching them a skill they can transfer to other courses. As a teachable moment, I like to point out to my students the retrieval cues in the test questions when I hand back their first exam (especially my freshmen introductory psychology students). I explain to them what retrieval means, what a retrieval cue is, and how they can use retrieval cues to help them learn. Though this directly ties into our chapter on memory, I find it important to highlight early in the semester and with a "real live" example that they can see in front of them on their exam. I encourage them to pay attention to, and make note of, things in our class that they can use as retrieval cues. Students often point out that their other professors don't include retrieval cues from lecture in their test questions. It is here where we can make a difference.

Students should know that the retrieval cues they make themselves are much more memorable than the ones we provide for them – something called the generation effect (Slamecka & Graf, 1978). The simple act of having students generate their own retrieval cues forces them to actively engage with material and encourages deeper processing of the information. This deep, or elaborative, processing naturally increases the number of retrieval cues available for any given memory and leads to an integration of the new information into the knowledge they already have. Thus, by generating their own retrieval cues, students gain twice. They increase their chances of being able to retrieve the information because they have many different cues attached to the material and because they have processed the material in a way that promotes a deeper overall understanding.

We all strive for our students to have a deep understanding of our course material, but we first need to get them to retrieve the relevant information. So whether it is Lilo and Stitch or your niece, remember that “a key to improving memory for any material is increasing the quantity or quality of retrieval cues” (Tigner, 1999, p. 149).

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Chapter 2

Strategies for Teaching Writing Effectively in a First Year Seminar

Traci Giuliano
Southwestern University

The idea of teaching a first year seminar can be daunting because it is typically expected that students be taught—in addition to course content—important writing and research skills that they’ll need to succeed in college. For psychology faculty, this task can be especially challenging because first-year writing differs somewhat from the kind of empirical writing we teach in research methods or other psychology courses. During the many times I’ve taught first year seminar, I’ve experimented with several different strategies (some effective, others less so) to teach college writing to beginners. In this essay, I share three strategies that have worked well for my students and that I hope will be helpful to others, regardless of course topic.

Introduce the “They Say/I Say” Approach to College Writing

In their book, *They Say, I Say: The Moves that Matter in Academic Writing*, Graff and Birkenstein (2010) argue that in writing an academic paper, students need to frame their argument as a response to others’ views rather than merely present their own thoughts on a topic without reference to other viewpoints (as beginning writers often do). Graff and Birkenstein explain that academic writing is argumentative writing—students can’t simply assert their position without any facts or context; they need to “enter a conversation” using others’ views as a launching pad; and once students do enter the conversation, they must support their case with credible evidence. The book teaches students the steps and basic “writing moves” to objectively summarize others’ views (i.e., “They say”) and to subsequently set up their own arguments (“I say”). Specifically, these steps include (1) summarizing others’ views in a fair and objective way, but with a “spin” that lays the groundwork for their own arguments; (2) making a unique contribution to the conversation by disagreeing “with a reason” (i.e., one supported by evidence) or by agreeing “with a difference” (i.e., making a novel contribution by adding fresh or unique ideas); (3) distinguishing what “they say” from what “I say” (i.e., using citations and signal phrases to make source attribution clear); (4) anticipating and addressing criticisms and limitations; and (5) telling readers why they should care about the arguments being made in the paper.

In an effort to save time and spare students from reading the book, I teach students this approach using a handout I created based on the book. In addition to summarizing the steps for using this approach, my handout includes dozens of “template” phrases—common phrases that good writers use in various situations—that students can use to convey their arguments in a scholarly tone. Among many others, there are examples for introducing standard views (“Conventional wisdom has it that...”), describing research (“Several studies have examined the extent to which...”), discussing an area with little research or with a gap in the literature (“At

present, research has yet to determine whether ___ is true”), synthesizing the literature (“Together, these studies suggest...”), making a claim (“The premise of this paper is that...”), challenging others’ claims (“A major weakness of this idea is...”), anticipating and addressing criticisms (“One potential criticism of this idea is that ___; however,...”), and telling the reader why they should care (“Ultimately, what is at stake here is...”). In short, the idea is that all experts (whether in soccer, painting, cooking, or writing) have mastered a series of basic moves, and that beginning writers can learn the basic moves of writing by using these templates.

Since I’ve been using this approach, I’ve found that students don’t feel as “blocked” in getting started on their writing. They easily understand the basic idea of “They Say/I Say,” and are able to follow the steps laid out for them. They frequently use the template phrases in their writing, which improves their scholarly tone dramatically. Indeed, student papers are markedly better in both content and style since I started using this approach. Students also report that their papers in other courses (regardless of discipline) are of higher quality and are easier to write.

Help Students Understand What Does and Doesn’t Constitute Plagiarism

The first year seminar is an ideal place for students to learn how to cite sources properly, both because of the emphasis on writing and because it’s one of the first courses students take in college. A good, thorough understanding of what does and doesn’t constitute plagiarism can help students throughout their entire college career and beyond.

The key to teaching about plagiarism is that this information must be taught multiple times and in as many specific contexts as possible. Plagiarism is covered in my syllabus and I introduce the topic on the first day of class. Early in the semester, we go over a detailed handout on proper citation in APA style. The last page of the handout defines and distinguishes between word plagiarism (using an author’s words or phrases without quotation marks) and idea plagiarism (presenting an idea from another source without citing the author and year). The handout then explains how these commonly occur unintentionally. For example, students often commit word plagiarism when they think they’ve paraphrased an author’s words because they’ve added or removed a few words or changed the order of the words; students often commit idea plagiarism because they write about something they heard in another class and either can’t remember the source or assume that it’s common knowledge and doesn’t require a citation, or because they don’t understand citation rules, such as when they assume that a citation in parentheses at the end of one sentence carries forward throughout an entire paragraph or page following the cited sentence. The handout also suggests strategies to help students avoid committing word plagiarism (e.g., paraphrase when taking notes on an article rather than writing down an author’s words verbatim) or idea plagiarism (e.g., assume most facts are not common knowledge, always look for a source for any fact or idea, understand that citations in parentheses apply to that sentence only).

A week or so later, students are then assigned to take an online plagiarism tutorial from Indiana University (<https://www.indiana.edu/~istd/>) to capitalize on what I taught them earlier and to give them extra practice. The IU website (“How To Recognize Plagiarism,” 2014) is excellent, and includes an overview, sample cases, examples of plagiarism, practice identifying plagiarism accompanied by feedback, links to other useful resources, and a certification test. With

satisfactory completion of the tutorial, students print and sign a completion certificate from the site and turn it in to me. (This certificate is nice to have on file in the case of a suspected violation later, as it's difficult for students to argue that they don't understand what constitutes plagiarism if they've completed the tutorial!) As one final test of their understanding, I give students an additional plagiarism test (comprised of examples culled from previous student papers) in which they see a source phrase and 2-3 student rewordings of it and have to identify the rewordings as word plagiarism, idea plagiarism, both, or neither. We go over the answers in class, which gives students an opportunity to ask questions and get clarification.

Finally, in going over each writing assignment, I remind students about plagiarism and proper citation in the context of that assignment. I also encourage students to meet with me if they have questions about proper citation in general or if they want to show me a specific example that they're unsure about. By keeping the conversation going and the channels of communication open, I hope to ensure that the issue of proper citation is always salient and important to students.

Provide Detailed Expectations, Guidelines, and Examples, Including Small Steps Along the Way

Having clear expectations and guidelines is important for all students, but especially for first-year students who are establishing study habits and time management skills that they'll rely on throughout their college careers. In addition to detailed handouts that describe the guidelines of each assignment, I give students the grading rubric in advance, so they're reminded of what content is expected and so they know how many points are dedicated to each section. Over the years, I've also found that requiring students to complete and turn in a checklist with the assignment increases the likelihood that students follow the guidelines. What I include on the checklist differs by assignment, but it typically includes three sections: (1) a list of checkboxes that describes what should be turned in and in which order (e.g., the grading rubric on top, followed by the final copy of the paper, followed by the marked up draft from the peer-reviewer), (2) a list of checkboxes to verify that students have followed certain guidelines (e.g., that they fully addressed and incorporated the peer-reviewer comments, that they included a thesis sentence--they specify in the checklist which paragraph and sentence contains the thesis to make it easier for me to identify), and (3) a list of statements that they must initial (e.g., certifying that they are aware of what constitutes plagiarism and that they did not commit word or idea plagiarism, that they carefully proofread the entire paper after it was printed out), followed by our university's honor code and their signature.

In addition to providing detailed expectations and guidelines, I structure my assignments so that they consist of a series of steps, each of which builds skills necessary for the next assignment. To learn the "They Say/I Say" approach to writing, for example, students first write a short essay that requires them only to objectively summarize another author's argument ("They Say") in an interesting but brief article (Svoboda, 2008). Then, as part of a longer second essay, students summarize two sides of a debate on a topic of their choice (from readings I provide; Taverner & McKee, 2011) and draw a conclusion based on the quality of the evidence presented. (This essay requires them to put both "They Say" and "I Say" into practice, but

without doing outside library research.) Then, for their final research paper (which does require library research), students progress through several manageable steps (e.g., an annotated bibliography, an outline of the paper, a draft of the paper for peer review, and then the final paper) in order to put everything they've learned in the course together into a final product.

Ultimately, students need to know what their end goal is and what their paper should look like. I've found that having excellent previous student work available to students gives them something to emulate and lets them know how high the bar is for a given essay or paper. As such, I provide students with examples not only for essays and the final paper, but also for the annotated bibliography, paper outline, and even what constitutes high quality peer review feedback. I find it especially helpful to annotate the examples in advance (using the "track changes" feature in Microsoft Word) so that students can understand--via comments in the margins--which specific aspects of the writing make it a good paper (e.g., "Notice how the opening sentence, which is interesting and engaging, introduces the reader to the general topic"; "The thesis is clearly articulated here in the last sentence of the opening paragraph"; "Good use of 'signal phrase' to tell the reader that this is the writer's own argument"; "Here the writer anticipates and addresses criticisms"; "These two sentences consider the practical applications of the writer's argument").

Conclusion

In sum, although teaching in a first year seminar can be challenging, it is also rewarding—both for the instructor and for the students. Students find the course manageable because of the detailed handouts, exemplars, and step-by-step approach; more importantly, they report that they learn a tremendous amount about scholarly writing (including how to avoid plagiarism) that is helpful to them throughout their college career.

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Chapter 3

The Case for Laboratory Exercises in Introductory Psychology: Beyond Active Learning

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As greater percentages of high school graduates seek college degrees, a large body of research on “first-year students” has been amassed. Perhaps one of the largest repositories of survey data on first-year students is the National Survey of Student Engagement (NSSE), which has spawned projects such as the “Parsing the First Year of College” project led by Reason and Terezini (Terezini, Reason, Cox, Lutovsky, & McIntosh, 2009). The findings of this project align with literature that precedes it (e.g., Zhao & Kuh, 2004), pointing to the value of high-impact educational experiences as a path to a higher quality collegiate experience.

High impact educational experiences (also known as experiential learning or applied learning) can take on many forms. Service-learning, study abroad, undergraduate research, and internships/practica/clinical are all exemplars of such experiences (Schwartzman & Henry, 2009). In addition to these practices that individual faculty might choose to incorporate, other high impact experiences occur at the institutional level, such as learning communities. NSSE (2005) describes learning communities as programs in which groups of students take two or more classes together. I might add that these learning communities usually come with smaller class sizes than might normally be encountered in large general studies courses.

This research on the importance of applied learning experiences for first-year students aligns with the American Psychological Association’s (2013) recommendation for our discipline to include laboratory experience in all Introductory Psychology courses. Many lay people see psychology as less than scientific (Lilienfeld, 2012), and laboratory experiences may help dissuade first-year students from this misconception. Combining this content-specific high-impact experience with the institutional practice of learning communities may be even more potent a strategy.

Laboratory Exercises versus Active Learning Activities

The notion that introductory psychology should involve activities beyond mere lecture is not a new idea. One only needs to attend any conference devoted to the Teaching of Psychology or read an issue of *Teaching of Psychology* to find a plethora of ideas for how to make your introductory psychology classroom more “active” so that students will be more “engaged.” Over 20 years ago, Ludy Benjamin (1991) published a paper devoted to promoting active and engaged learning, even in large introductory psychology courses. Yet the APA (2013) recommendation is not simply about incorporating activity, but a particular kind of activity, to achieve that engagement. Berthold, Hakala, and Goff (2003) note that one of the pragmatic challenges in implementing laboratory activity into introductory psychology is that it generally

will require smaller sized sections in which the laboratories can occur (noting that they like to limit enrollment in laboratory activities to 25 or fewer students).

Decreasing class size is necessarily associated with increased administrative costs, so the benefit to learning outcomes for such changes needs to be clearly documented before most administrators will even consider such a move. In the interest of exploring this question, I took the opportunity to compare laboratory exercises to more generic “active learning” activities in terms of the learning outcomes students experienced on subsequent quizzes of related material. Additionally, I had the benefit of teaching two sections of introductory psychology during the semester this comparison was made—one of those sections was part of a broader “learning community.” The two sections were equal in size (25 students in each) and my comparisons were built around a 2 (learning community versus “regular” section) x 2 (laboratory exercise versus active learning exercise) design with repeated measures on the latter factor. The main dependent variable of concern was quiz performance associated with a given type of exercise.

The students worked on these exercises in small, cooperative work groups that had stable membership over the course of the semester. The small groups, which generally had 4-5 members, would take turns leaving the lecture hall to participate in their “lab experience.” This happened ten times over the course of the semester, and each experience was designed to be an active learning experience built for a cooperative work group to complete in about 25 minutes with minimal supervision. When all the groups had completed a given activity, I spent some time in the large lecture situation to contextualize the work they had done in terms of the course learning objectives. Although we called these activities “labs,” in reality, only three of the ten activities were actually laboratory exercises in the sense that they involved collecting and analyzing data using descriptive statistics. The remaining seven exercises were simply active learning experiences that might involve applying the knowledge of the course to a problem, but did not involve collection and analysis of data.

The Laboratory Exercises

The laboratory exercises dealt with cross-cultural psychology (covered in the text’s introductory chapter), semantic network models (covered in the text’s memory chapter), and coping styles (covered in the text’s health/stress chapter). Each of these exercises involved students generating data on themselves as subjects and then analyzing it. For the cross-cultural lab, the students individually completed the “I Am” scale (Triandis, McCusker, & Hui, 1990) as a measure of individualism/collectivism. They then swapped scales around the table in their small group breakout session, and followed directions in a coding manual for scoring this instrument. This activity concluded with them “analyzing” the data for inter-rater reliability, measures of central tendency, and measures of variability on their group score.

The semantic network model lab involved students mapping out their own semantic network of associations with various terms and then comparing those networks to those of other group members. They had to find ways to take these qualitative drawings and report on the similarities and differences amongst themselves in terms of the drawings the group members generated. This typically involved identifying percentages of times one item was mentioned in association with another, and reporting on that.

The coping styles lab involved students completing Endler and Parker's (1990) Multidimensional Assessment of Coping (short form), and calculating individual scores for the three subtypes of coping: problem-focused, emotion-focused, and avoidant. Students then listed what they perceived to be their main stressor, and the group coded each person's as either a "changeable" or "unchangeable" stressor. Finally, the small student groups examined the relationship between individual coping style scores and the type of primary stressor for each participant and reported on the relationship between them.

The Active Learning Exercises

The remaining seven activities students completed in their small groups did not involve data collection or analysis, but did involve actively applying material from the text to the activity. They included: (1) analyzing an allegorical scenario in which characters in the scenario corresponded to different neurotransmitters and making those identifications; (2) analyzing different proposals for advertising strategies involving subliminal perception for when those would and would not be effective; (3) identifying biological effects of drugs in the nervous system; (4) analyzing scenarios for components of classical and operant conditioning; (5) reading descriptions of various day care settings and ranking their quality; (6) describing personal fears/phobias, their origins, and examining if any of them could be explained by classical conditioning; and (7) playing a social dilemma game (one-shot) against each other. Because the last activity might arguably have elements of both a lab and an activity (students were in the role of participant, but did not really do anything with the data that arose from playing the social dilemma game), it was excluded from the analysis reported below.

Based on informal feedback, students enjoyed these activities as much or more than the "lab" activities, and did not perceive them to be fundamentally different. I did not call out the differences to them in any way, in that all ten of these activities were simply called "labs" and occurred in breakout sessions. From the student perspective, they were not pedagogically different.

Learning Outcomes

From previous research, I had expected the learning community section to outperform the "regular" section of introductory psychology, and this is exactly what occurred. More compelling for our discipline, is that the learning outcomes differed across the two types of activities in question, with the laboratory exercises yielding consistently higher performance on associated quizzes than the active learning exercises. This was true in both the "regular" and learning community sections. The mean score on subsequent quizzes for the "regular" section was 4.7 when the quiz was associated with an "active learning" activity and 5.66 for quizzes associated with a lab activity. For the learning community section, this pattern held, although the mean scores was higher for both: mean score of 5.55 for quizzes associated with "active learning" activities and mean score of 6.61 for quizzes associated with lab activities. For both sections of the course, the assessments that were associated with laboratory exercises yielded an improvement in the quiz scores of about 1 point. Given that the quizzes were worth a total of 10 points each, the functional difference from a student perspective is about one grade level.

Concluding Thoughts

Although laboratory experiences will require institutions to make administrative changes that appear to increase costs in the delivery of introductory psychology, my initial experience in comparing the laboratory exercises to the active learning exercises more amenable to large lecture sections is that labs may likely produce enhanced learning outcomes that justify the added costs. In the state of Missouri (where this work was done) and elsewhere, funding for higher education is increasingly linked to performance outcomes, including retention from the first to the second year. Just a few days ago I attended a mandatory general session for all employees at my own institution where this message was driven home. The concluding thought was that if, through instructional changes, we as faculty were able to save nine students out of the entering cohort, it would increase our retention by 1%, which ultimately be linked to hundreds of thousands of dollars in revenue, not only from tuition/fees but from greater state support due to better performance outcomes on retention measures. If laboratory exercises in Introductory Psychology consistently result in student learning outcomes enhanced by one grade level, this would arguably be an instructional change an administration could get behind.

My own observations shared here are contextualized in the type of institution at which I work: state-supported regional university with an open admission policy. We are not considered selective by any stretch of the imagination. As the reader can see from the average quiz scores presented above, average performance in general studies courses (like my Introductory Psychology course) are fairly low—indeed, many will fail no matter what instructional tools I bring to the classroom. But those students in the middle, on the cusp between failing and passing, are likely the ones who will benefit most from inclusion of a laboratory component in Introductory Psychology. And beyond these learning outcomes, such strategies will help students who experience them—even those who do not succeed in completing college—have a more accurate understanding of what psychological science is, and what value it brings to society. And that is worth investing in.

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Chapter 4

Plunging into Pedagogy: Some Practical Advice for Graduate Teacher Training

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Background

How were you trained to teach? As we began compiling and editing *The STP Guide to Graduate Training Programs in the Teaching of Psychology*, it became clear that graduate training in pedagogy is wildly diverse (Beers, Hill, & Thompson, 2012). While there were commonalities between programs, none of the 52 institutions in the *Guide* constructed their programs the same way. Some had brief, intensive teaching orientations at the beginning of each semester, others relied on their campus' teaching centers, while still others utilized a formal course (Beers et al., 2012; Buskist, Beins, & Hevern, 2004; Buskist, 2013).

Each of us has experience training graduates to teach in coordinated sections of Introductory Psychology. As we worked on the *Guide*, we asked ourselves is there a “best” way to train graduate students? We had each attempted to use established measures of teaching effectiveness (e.g., the Teacher Behavior Checklist (TBC); Buskist, Sikorski, Buckley, & Saville, 2002; Keeley, Furr, & Buskist, 2010; Keeley, Smith, & Buskist, 2006) during classroom observations. While the TBC is an outstanding measure for faculty, it was difficult to use with graduates (Hofer, Farnsworth, Hill, & Warne, 2014). When we contacted the creators of the TBC to discuss this issue, we received an interesting response. They did not use the TBC to evaluate their graduates; they utilized a separate observational tool better suited to graduates (Buskist, personal communication, 2011).

We wondered: why are tools for evaluating more experienced teachers different from those used to evaluate novice instructors? Teaching seems to have developmental stages (Nyquist & Sprague, 1998). Unfortunately, very little is known about concrete skills associated with those stages. So, we explored the earliest stage of teaching development by employing methods of Buskist, et al., (2002) using open-ended questions to investigate (1) the critical skills necessary for teaching the first time and (2) the best ways to develop those skills. Interestingly, both faculty and graduates tended to agree on “survival skills” (e.g., public speaking, organization, mastery of course content). Disagreement occurred on topics such as, classroom management and technology literacy, which were both mentioned more by graduates and reflection on teaching, mentioned more by faculty. Graduates and faculty were less likely to agree on the best ways to train critical teaching skills. Graduates heavily favored structured teaching preparation activities, such as seminars and on-the-job practice/experience, while faculty

avored individual mentorship, reading about best practices in pedagogy, and self-reflection on teaching.

Reflecting on the outcome of our questionnaire, we realized that all of us included the elements of training that graduates desired, but we also likely had more than they thought they needed to prepare for their first teaching experiences. In the rest of our essay, we will share both successful and less ideal parts of our graduate pedagogy preparation experiences. We hope that our experiences will provide you with ideas and inspiration for fine-tuning your graduate training program.

Recommendations from Melissa

Teaching for the first time provokes anxiety. It doesn't help matters when that preparation occurs in the context of a rigorous and research-intensive graduate program. In fact, a GTA's first teaching experience can often be an exercise in survival. Balancing the class you're teaching with the class(es) you're taking and your research projects creates more demand on your time than there are hours in the day. The sheer cognitive load can prevent GTAs from considering the merits of different teaching techniques, and who has time for self-reflection or a teaching philosophy? As Svinicki and McKeachie (2014) diplomatically write,

When you are just starting, discussions of philosophy of education and theories of learning and teaching are probably not as important as learning enough simple skills to get through the first few weeks without great stress and with some satisfaction. Once some comfort has been achieved, you can think more deeply about the larger issues discussed in later chapters, and you can have more fun, too (p. 4).

This does not imply, by any means, that teacher training should not include those higher-order elements. However, we need to keep our GTAs' needs in mind in terms of how we structure that training.

At Ohio State, a GTA's first teaching assignment is usually Introduction to Psychology or Social Psychology. Before teaching, GTAs participate in a 12-week seminar/practicum. The seminar and practicum were originally envisioned as separate components; GTAs were expected to complete the more general, theoretical seminar first to gain a foundation in teaching and learning, followed by a practicum focused on developing materials for one specific course.

Although this model seemed pedagogically sound, GTAs routinely expressed frustration and discontent. They didn't want to wait to get started preparing their course materials, and the practicum they viewed as indispensable—why, they asked, were we “wasting their time” with the seminar? We couldn't imagine sacrificing the seminar, but we had to create a better balance of pedagogy and practical skill building.

With this in mind, we restructured the course entirely. In the current format, GTAs “prepping” both courses meet together in seminar twice a week to discuss general pedagogical issues and the scholarship of teaching and learning. Immediately following this discussion, the groups break out into separate practica, each led by a senior GTA coordinator, where they can apply this content to their specific course preparation.

I've learned that the focus on practical application is key. In practicum, GTAs talk through how to teach specific topics, how to structure exams, prompts, and rubrics, and identify specific teaching resources. Along the way they receive feedback on the materials they develop and have the opportunity to give "microteaching" presentations in classrooms across campus to build familiarity with the environments and technology they will be using. This model gives GTAs the practically relevant skills and resources they need, direct formative feedback on the materials they develop, and the opportunity to relate pedagogical research and theory to their specific teaching context.

Recommendations from Clarissa

It's not always easy to get faculty and graduate students at research-intensive institutions onboard with graduate teacher training because it is often erroneously perceived as taking valuable time away from research. Since joining the faculty at the University of Oklahoma (OU), I strive to show that good teaching is valued at our institution and that teaching and research aren't mutually exclusive.

Taking a teacher training course at The Ohio State University was foundational for my own teaching development, thus I chose to structure the course I developed for OU students similarly (see Melissa's description above), although with several important departures. One new aspect of my Teaching of Psychology course is to help graduate students balance the many roles that they assume during graduate school including being a student, researcher, and teacher while maintaining a personal life. To this end, I assign readings from the STP e-book, *So You Landed a Job-What's Next?* (Keeley et al., 2013). I also invite a panel of seasoned graduate instructors and Marilla Svinicki, author of *McKeachie's Teaching Tips*, to discuss this balancing act. It's heartening for graduates to hear that even teaching veterans need help managing the "three ring circus" of academia.

As part of this balance, I illustrate that research and teaching can inform one another. Specifically, research shows that graduate students' teaching experiences can translate into improved research skills (Feldon et al., 2011). To this end, graduates choose a current empirical article from *Teaching of Psychology* and lead a discussion about the pedagogical implications for their own students. Students also read the book *How Learning Works* (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010) to illustrate how principles from cognitive science inform best practices in teaching. I expose graduates to the scholarship of teaching and learning (SoTL) by inviting a Mathematics faculty member to provide tips on how she's used her classroom as a laboratory to study student learning. As part of an active learning demonstration, graduates have the opportunity to propose their own experimental design to answer a teaching-focused research question.

Finally, I demonstrate that our department values good teaching just as much as good research. This is done via an annual departmental teaching award that I created. The award recognizes outstanding graduate instruction and helps graduates work toward building teaching vitas that are as impressive as their research vitas.

If you are planning to offer a teacher-training course, consider the amount of work you will expect from your students because they are balancing many roles and are likely feeling

overwhelmed as the clock ticks down to their first day of class. Also, consider whether your training course will be an elective or required for all new instructors. It may send a stronger message that the department values good teaching if the course is integrated into the required curriculum. Build opportunities for less formal mentorship. For example, graduates who enroll in OU's Graduate Teaching Academy (GTA) are paired with faculty mentors to discuss teaching-related issues. The GTA allows for "continuing education" of new instructors as they're receiving on-the-job training in their own classrooms.

Recommendations from Jessica

When I was training graduate students to teach at the University of Florida, the graduates consistently expressed a common concern about their preparation to teach: information overload! For example, the graduates were required to attend 12 hours of training at a university orientation followed by a 16 to 20 hour departmental teaching orientation. For those who did not complete university orientation in prior years, they spent approximately 32 hours of training in just one week. While the trainings they received were excellent and of outstanding quality, many graduates felt as if they didn't have enough time to process all the wonderful and helpful information they received. This was particularly true of those who had no prior teaching experience.

Many of the graduates went on to teach their own courses under the supervision of a faculty mentor after their intensive training experiences. A small subset of graduates, those who taught the introductory psychology course, continued to meet with me on a weekly basis throughout the semester. Our "staff" meetings were modeled after those employed at the University of Illinois at Urbana-Champaign (Beers et al., 2012). Meetings were tailored to meet the needs of the graduates involved; difficult content, classroom management issues, assessment creation and evaluation, as well as sample activities were presented to first-time instructors by veteran instructors. This structure allowed the veterans to explore more advanced pedagogical concepts such as reflection on their own teaching and the incorporation of feedback in order to create effective presentations for their more inexperienced peers. Veterans were also able to act as informal mentors to the novice instructors, thus allowing them to compare their own developmental teaching trajectory to those just beginning.

One disadvantage to the once yearly trainings was a disconnected feeling reported by those trained in the fall but began teaching in the spring. During the trainings, the trainees felt confident that they had enough information to begin teaching; however, when they reported for duties in the spring, they expressed that much information had been forgotten or not processed. I informally observed that it took them a few weeks longer to feel comfortable in their new teaching role as compared to those who were trained and immediately began to teach.

My graduates wanted to teach well, and they appreciated the training that they had before their teaching experience. Those who were able to have weekly teaching meetings valued the support and encouragement they received. This echoes the sentiments expressed by graduates in our recent work (Hill, Thompson, Tran, & Beers, 2014). Graduate instructor respondents expressed that they wanted (1) to be well prepared to teach before their teaching experience, and (2) they want to be supported during their initial attempts at teaching. I suggest weekly

meetings with novice graduate instructors, particularly during their first and second semesters teaching. This is a unique period in the development of graduate instructors as they are acquiring foundational skills rather than perfecting and refining what they have already learned (Hofer, Farnsworth, Hill, Warne, 2014).

How to Take the “Pedagogy Plunge”

Are you thinking about adding a teacher-training component to your graduate program? We urge you to take the “pedagogy plunge!” Graduate training can be formal, like a graduate teacher-training course, or informal, like mentorship between a faculty and graduate student that occurs over coffee. Check out The STP Guide to Graduate Training Programs in the Teaching of Psychology (<http://teachpsych.org/ebooks/gst2012/index.php>) for some ideas.

In our experience, graduate students find great value in preparing for their first time in front of a college classroom, though, many of them note that this preparation is sometimes hard and time consuming. However, we haven’t met a student who has thought the training was a waste of their time. Instead we get open-ended feedback from our trainees like this:

I think when I graduate and look back on my career, this will be my favorite course...Although it was a GREAT deal of work with long class days, I appreciate everything that we covered and feel much more confident and prepared to begin my teaching career. I may not know the answer to everything, but I'm assured that I have a resource to turn to.

Regardless of whether you decide to offer formal or informal training, graduate students will appreciate your focus on improving their “survival skills” such as public speaking ability, organization, and content mastery, but don’t be afraid to teach the graduate students the value of reflection on their teaching. Reflection on best practices may not be graduate students’ top goal as they are about to enter the classroom, but with time in the classroom, they will see just how helpful it is. Starting out on the right path can only help them be more effective faculty members down the road. Take the “pedagogy plunge;” your graduate trainees will thank you for it!

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Chapter 5

Using Students as Participants: Gaining IRB Approval for SoTL Research

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Just as a developmental psychologist will employ longitudinal or cross-sectional methods, a teacher scholar will utilize their classroom as a laboratory, setting up studies to draw conclusions about student learning. When we do this, we need to take certain ethical considerations into account. We should be particularly concerned with the changing roles whereby students become participants and teachers become researchers (Burman & Kleinsasser, 2004; Dale, 1996; Swenson & McCarthy, 2012). Other issues include avoiding coercion, appropriate data collection times and places, obtaining consent, and protecting anonymity. This is why it's important and necessary to gain Institutional Review Board (IRB) approval when conducting Scholarship of Teaching and Learning (SoTL) research.

The Society for the Teaching of Psychology (STP; Division 2 of the American Psychological Association) provides us with many great resources related to SoTL including e-books, journal articles, grants, and workshops (Society for the Teaching of Psychology [STP], 2014). Within these resources, and inspired by Halpern and colleagues' (1998) original definition within psychology, SoTL is described as scholarly work, rigorous in nature, that is done to enhance teaching and promote student learning. SoTL ideally results in peer-reviewed products that are available to the public (Halpern et al., 1998; STP, 2014). The definition includes research on teaching pedagogy where learning is the outcome variable of interest, and researchers disseminate and make public their results. The goal of teaching (i.e., student learning) is then related to the goal of scholarly teaching (i.e., to demonstrate how teachers have fostered such learning). To do this, we must collect evidence on teaching effectiveness, reflect, evaluate and communicate the results (Trigwell, Martin, Benjamin & Prosser, 2000).

As more professors engage in SoTL work, clear ethical and methodological parameters ought to be established. In 2008, Wilson called for more guidance to help SoTL researchers make fair choices with our student's best interest in mind. She asserts that if we started treating SoTL like *real* research, it would become more respected. Since then, SoTL has gained in popularity, prestige, and respect. More recently, the editor of *Teaching of Psychology* emphasized utilizing solid research design for SoTL research in psychology (Christopher & Troisi, 2013). However, some ethical issues about SoTL research with students can be unclear.

When does SoTL work surmount normal teaching inquiry and become research that needs to be approved, monitored, or in some cases restricted? A certain level of commonly accepted experimentation on teaching effectiveness is allowed. However, the point at which educational process becomes true research is often not clear (Burman & Kleinsasser, 2004; Swenson & McCarthy, 2012). Furthermore, should SoTL work be held to the same standards that we have traditionally accepted in our primary research fields (Wilson, 2008)?

Why is IRB Approval Necessary for SoTL Research?

In the past, professors have been hesitant to obtain Institutional Review Board (IRB) approval for SoTL projects (Wilson, 2008). The line between examining normal classroom experiences and research was not clear or well defined. Today, we see a rise in the popularity of SoTL research as well as a high level of sophistication within the work itself. For these reasons, we suggest that the uncertainty that used to exist is now clearer. To protect our students, you should obtain IRB approval or at the least contact your institution's IRB chairperson for clarification (Swenson & McCarthy, 2012). Gaining IRB approval increases the respect, methodical vigor, and acceptability of SoTL work as true scholarship.

Public sharing of ideas about teaching and learning is an essential piece of SoTL research (Shulman, 1993). Work can be disseminated among colleagues in colloquiums, teaching portfolios, conference presentations, chapters, books, and peer reviewed journal articles. To communicate research findings in these ways, IRB approval must be gained for the study. These various forms of dissemination provide a good rule of thumb to determine if you should seek out IRB approval. If you do not intend to publish your research results IRB approval does not need to be granted. Regardless of whether IRB approval is obtained, you should adhere to the ethical principles as prescribed by the APA (American Psychological Association [APA], 2010; Swenson & McCarthy, 2012).

Regardless of whether the research is disseminated, because students are human subjects they are entitled to certain protections. "Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains (1) data through intervention or interaction with the individual, or (2) identifiable, private information" (US Department of Health and Human Services [DHHS], 2009, p.4). It is for this reason that we, and other SoTL scholars, strongly suggest that IRB approval be obtained for all classroom research, regardless of publication intentions (Burman & Kleinsasser, 2004; Swenson & McCarthy, 2012).

Title 45 of The Code of Federal Regulations, Part 46, regulates the protection of human subjects (DHHS, 2009). There are three ethical principles to follow: (1) Respect for persons including autonomy and informed consent. With regard to autonomy, people have the right to decide for themselves to participate, or not, in research. With regard to informed consent, people who may be considered vulnerable should be provided special protections. This includes student populations. (2) Beneficence (i.e. risk-benefit analysis); the risks of any study must be minimized, and benefits must always outweigh the risks. (3) Justice: those who bear the burdens of research must receive its benefits (also encompassing fair subject selection). Following these regulations is of central importance for all researchers. The following section discusses major issues and considerations for your consideration that are specific to using students as participants in SoTL research.

IRB Considerations

Recruitment and consent

If your research participants will be students in your courses, then there are special ethical considerations that arise. You will have two roles, first as the instructor of the course, and second as a researcher on a scholarly project. Balancing the demands of both roles can be

tricky. Additionally, your students have both the role of a student and the role of a research participant. Having multiple relationships with students is not in and of itself unethical, according to APA's Ethics Code (APA, 2010). As long as the relationship has no risk or harm, then conducting SoTL research with your students is acceptable (Swenson & McCarthy, 2012). However, depending upon how you manage the different roles and relationships, it could lead to ethical problems.

One problem that can occur happens in the recruitment process. Given that you are their instructor, students may consent to participate because they like you or because they feel as if their grade depends on their participation (Martin, 2013). Part 45 and 46 of the Code of Federal Regulations state that participants should "consent only under circumstances that provide the prospective subject or the representative sufficient opportunity to consider whether or not to participate and that minimize the possibility of coercion or undue influence" (DHHS, 2009, p.7). In addition, APA's ethics code indicates that psychologists need to protect participants from adverse consequences if they choose to decline or withdraw from a research study (2010).

One way to assure that coercion or undue influence does not happen would be to leave the classroom and have a third party (e.g., a colleague or collaborator) come in to recruit participants and obtain consent. The third party should make it clear that students' grades in the course will not be affected by their decision to participate or not. Another added safeguard would be to make it clear that you, as their instructor, will not know who consented or did not consent to participate in the study. All of this should be emphasized by the third party when obtaining consent and also be clearly and prominently displayed in the informed consent form.

To prevent yourself from knowing who participated, have your colleague put the signed consent forms in a sealed envelope (Burman & Kleinsasse, 2004). Additionally, you might consider not finding out how many students consented to participate until after grades are turned in. If you know that 100% (or 75% or 10%) of your Introductory Psychology students consented to participate, will that change your behavior in the classroom? You might start engaging in a guessing game of who did or did not consent, and that speculation is better left until after the semester ends. Specifically, knowing that 100% or 0% of the students consented might change your attitude toward that class of students while you are still teaching the course. That changed attitude could ultimately interfere with obtaining accurate data in your study.

Student work vs. research

Another problem that can occur when your students are your participants is distinguishing what assignments or activities students complete for the class and what students complete for the research project. In some cases, there may be little difference. For example, using exam scores as an indication of learning could be a part of your research design, but all students will take the exams for course credit, regardless of whether they are participating in the research study. If, however, you want participants in the study to answer other questions or do other tasks, such as answering a demographic questionnaire or filling out a scale, then those activities are ones that only participants need to complete.

If you are offering course credit or extra credit for the course for participation, there are two things to consider. First, you must offer students another option for earning those points. The APA ethics codes indicates that equitable alternative activities need to be available for students

as real and viable options when a research study counts towards their course grade or is offered for extra credit (2010). The second consideration in offering course or extra credit for participation is whether you as an instructor can still not know who did or did not participate in your research study during the semester. Having a teaching assistant or colleague handle the alternative assignments might help with that process.

Timing

Ethical issues can arise with the timing of data collection and recruitment. While some (see Burman & Kleinsasser, 2004) advocate obtaining informed consent at the beginning of the course or even having it in your syllabus, we believe the timing of the informed consent can vary, depending on the design. For example, a research design that includes a radical change to how you normally teach your class would lend itself to obtaining consent early in the semester, and you may even consider having some information about the study in your syllabus. A research design that does not change how you normally teach class may not need to have informed consent at the very beginning of the course.

What if you want to use student's work from a previous class? Burman and Kleinsasser warn us to proceed carefully if we choose to use data from a previous course without student consent (2004)! You can use this type of data for your own improvement as a teacher or as a pilot study, but using it for SoTL research may not be the best idea. For example, to maintain accordance with the Family Educational Rights and Privacy Act, known as FERPA (US Department of Education, 2001), consent must be obtained for all student work used in a research study. The specific artifacts that will be used and a well-defined understanding of how they will be used should be clear to the student (Burman & Kleinsasser, 2004). In other words, their artifacts, such as papers or projects are not yours to disseminate without consent.

Protecting confidentiality

As human subjects, students have the right to anonymity and/or confidentiality. They ought to be treated just as any participant in a psychology research experiment would. Because they are also students in your class, protecting anonymity can be tricky. A distinction should first be made between the terms anonymous and confidential, as they are often confused. For something to be anonymous, no identifying information is collected. Additionally, it should be impossible to identify who the participant is. In a SoTL classroom research study, students should not use their name on data collection materials. However, it should be noted that through demographic information or other responses, in a limited sample size (a class), it might still be possible for the professor to know who the participant is.

Standard four, "Privacy and Confidentiality," of The Ethical Principles of Psychologists and Code of Conduct helps clarify this issue. It states that "psychologists have a primary obligation and take reasonable precautions to protect confidential information obtained through or stored in any medium, recognizing that the extent and limits of confidentiality may be regulated by law or established by institutional rules or professional or scientific relationship" (APA, 2010). SoTL work is thus more concerned with confidentiality (protecting information) than it is with attaining anonymous data.

To protect confidentiality, SoTL researchers should de-identify all data. Numerical codes can be assigned to participants, which is also helpful if you are going to track them over time (pre and

post test measures). For example, researchers can have participants create their own unique numerical code by stringing together day of birth, last two digits of their phone number, and their favorite number. It is unlikely that two participants will create the same number and the professor has little chance of discovering who each individual truly is.

Once data is collected you should lock it in a cabinet in your office and you should wait until the course has closed (i.e., final grades have been submitted) before examining it. Only people approved on the IRB should be able to handle the data, and, if electronic copies are created, they ought to be treated with the same level of security. Audio, photo and video data should also be treated confidentially. If collecting such data, a separate consent form should be used with permission for release. Because the data provides identifying information, we recommend not including it in the dissemination of the study. Instead, researchers can code audio, video, or photographed data and summarize the information.

Concluding Thoughts and Advice

While obtaining IRB approval for a project may seem overwhelming, it is an essential part of the process of SoTL research. First of all, consult with your local IRB. IRBs are not there to impede your research, they are there to make sure you are conducting ethical research, and part of their job is to help you understand and navigate the IRB process. Also, local IRBs can be idiosyncratic, interpreting ethical rules and principles differently, creating slightly different experiences and rules. Finding out how your IRB functions before you submit a proposal can save you valuable time. You will also want to add time in the planning process to include consulting with and gaining IRB approval. While this can be one of the most vexing parts of working with the IRB, understanding and accounting for the extra time needed can help mitigate any frustration you might feel.

Next, learn about the IRB process and the ethical guidelines (APA, 2010; DHHS, 2009). SoTL research is not conducted at all institutions, so your local IRB may not be familiar with some of the ethical issues occurring in SoTL research. You may, unfortunately, be in the position of educating your local IRB about appropriate ethical considerations specific to SoTL research. In accordance with this, the IRB should not be criticizing your writing, the value of your research, or the methodology. The IRB is solely responsible for the risk that your study poses to participants (Martin, 2013). SoTL work might provide your institution the occasion to reflect on their IRB procedures and operations, providing a great learning experience while bringing your institution up to speed with federal regulations.

This article proposes strong support for obtaining IRB approval for SoTL research. We have outlined a few of the ethical issues that exist with the IRB. However, the issues that you need to consider, and that are discussed here, are certainly not exhaustive. We recommend reading and following the *International Code of Ethics for SoTL* that was presented by Gurung, Marin, Jarvis and Creasey (2007). Additional explanation and information can be found on FERPA regulations in Burman and Kleinsasser (2004), including nine principles to guide use of student work in classroom inquiry. This resource will hopefully aid your preparation of SoTL work for the IRB. We wish you the best of luck in your teaching and learning scholarly endeavors.

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Chapter 6

Integrating First-Person Narratives of Eminent Psychologists into an Introductory Course

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Introduction and Background

We firmly believe, and it is our experience that students surely benefit when instructors find a way to personalize the program of study in Introductory Psychology courses; that is, for example, when the usual topical presentation is enhanced in some manner by including accounts of the lives and contributions of the persons of the discipline. In order to accomplish this many texts present elaborate timelines of the history of psychology. A persistent feature of such depictions is the noting of specific contributions of persons within the unfolding field of study. In this essay we describe and discuss a pedagogical innovation in which we integrated a series of so-called “first-person” narratives of eminent psychologists into a typical introductory course.

We began this project in the Psychology Program of Bard College in the spring of 2013. We trace our innovation in the conduct of teaching Introductory Psychology to the work and historiographic approaches of Raymond Fancher and Ludy Benjamin. They both assert that the inclusion of the “back stories” of prominent persons of psychology can reveal much about the development of the discipline (Benjamin, 2007; Fancher & Rutherford, 2011). Moreover, they write that such detail actually belongs best in an introductory course of the discipline. In fact, in a recent communication, Fancher remarked about how it was his intention to offer his first edition of “Pioneers” as a supplemental text for offerings of Introductory Psychology. It was, and remains his belief, that the inclusion of biographical material enhanced his own novice students’ understanding of the topical progression and components within the study of psychology; this even more so within the often difficult and obscure domains of sensation and perception, for example. Fancher’s York University colleague, Alexandra Rutherford, adds her belief that a vivid inclusion of the lives and times of the “characters” that made our history, as they grappled with uncertainty within complicated issues of their domain, provides students of the present with a better understanding of the path of the discipline.

Ludy Benjamin, who has been teaching the history of psychology for many years at Texas A&M University, has published a few volumes titled “A History of Psychology in Letters.” In his preface to the second edition (2007), he describes how students enjoy the letters of notable figures of the past. This was so prominent in the usual progression of topics that he started to include many such pieces into his introductory courses. Courses in Introductory Psychology do not normally have such well-received components. Benjamin notes, as an example, how the letters of Christine Ladd-Franklin reveal the struggle of her attempt to gain access into the

domain of the all male psychology “club” of the early 20th century. Such letters also clarify much of the dynamics and progress of the discipline and the particulars of experimental approaches to psychology at the time. He further cites how James McKeen Cattell’s letters home descriptive of Wilhelm Wundt give clarity to the nature and conduct of the first bona fide psychology laboratory in Leipzig (Benjamin, 2007).

Further personal experience within teaching the History and Systems of Psychology in the curriculum at Bard College, upon its re-entry after a long absence, has revealed that the “back stories” spoken of by Fancher and Rutherford commanded great attention among our current students. Moreover, we generated enhanced interest when the material was occasionally presented in a first-person format by the instructor, or by a student assigned to do such from time to time. As additional student presentations were included in the conduct of the course, students remarked on having learned in great depth about the various turns in the development of the discipline. We quickly realized that something of educational value was afoot. It thus seemed that we could provide similar exposure at very early stages of undergraduate psychology training, rather than solely in upper-level courses. Through this curricular thinking process, we came to a plan whereby we could include a series of such presentations as part of the instruction within the Introductory Psychology course on our campus.

Implementation

In the spring of 2013 we decided to present first-person narratives of a selected group of eminent psychologists in one of four Introductory Psychology classes offered at Bard College. Where appropriate to the trajectory of the course, the last portion of the final class period of nearly each week was devoted to a particular prominent figure’s biographical narrative and contribution to psychology. These corresponded with the course coverage, content areas and textbook readings of the preceding classes of a particular week. The instructor (Gallup) of the course followed the usual topical structure provided in all Introductory Psychology courses taught at Bard College, but across the length of the semester the selected eminent figures received 20 minutes of close scrutiny within this unusual format. In particular, we presented the education, professional path, and research of these individuals as a first-person narrative. Their particular topic contribution to the progression of psychology would have been presented over the course of the week alongside more contemporary research and approaches – and now the individuals were given, flesh and bones, so to speak, forming the “back story” of our innovation. Students in our experimental section were informed in advance that they would not be assessed on the information provided in these narratives, but rather they were included in the course simply to provide a background of some of the major historical figures in psychology.

A collaborative/contributing instructor (Levine), who was introduced to the students on the first day of class, would visit only on presentation days and when signaled would come to the front of the class and begin by introducing “him or herself” as the prominent psychologist under consideration. In other words, a presentation might begin something like this, “Hello, my name is Burrhus Frederic Skinner, but you can call me B. F. as did most people who knew me.” At the beginning of the semester we had decided to present on the following ten individuals - Wilhelm Wundt, Sir Francis Galton, Charles Darwin, Rene Descartes, Max Wertheimer, B. F.

Skinner, Brenda Milner, Jean Piaget, Solomon Asch, and Carl Rogers. Such particular coverage can easily be altered and different instructors may hold preferences to their own liking or exclusion. For example our inclusion of Darwin may be viewed as nontraditional since he is not often considered a prominent figure in the field of psychology, but we decided his work was of the utmost importance to the students in our class due to the fact that evolutionary theory has tremendous application to human behavior.

Our presentations began by describing the personal background and even childhood of the individual, followed by information about their education, training and professional development. The final, and often extended, portion of the narrative described their major contributions to the field of psychology. The presentations were all fairly uniform across the prominent figures selected. For example, Table 1 provides an outline of some of the core components in our narrative for Max Wertheimer. In addition to the narration, we used PowerPoint slides to supplement the presentation by providing relevant images that coincided with the story.

Table 1. Narrative example for Max Wertheimer

Core components	Narrative topic examples
Upbringing and Education	I was born in Prague on April 15 th in 1880. My father was a teacher. I went to the University of Prague to study law and stayed with it for two years before switching over to philosophy and its extension into the realm of psychology. I then moved to the University of Berlin and in 1904 to University of Wurzburg to study with Oswald Kulpe, where I was awarded a Ph.D. in 1905. I met lifelong colleagues – Köhler and Koffka – at that time and at the Psychological Institute of the University of Frankfurt we developed the principles of Gestalt Psychology.
Contribution(s)	I observed while on vacation flashing lights at a train station and studied the timing of such at the psychology laboratory. In 1912 I published a seminal paper – “Experimental Studies of the Perception of Movement.” At a given speed, the flashing bulbs appeared to be in motion (1/20 of a second) and cannot be judged otherwise (Phi Phenomenon) and this is not explainable at the retinal level but only therefore at the cortical level. In 1933 I moved to the United States and became a teacher at The New School for Social Research in New York City at Columbia University. I wrote there my most well-known book – “Productive Thinking.”

Assessment and Conclusions

We were pleased with the positive outcomes and feedback from this initial pedagogical implementation. In comparison with the three control classes at our disposal, feedback from students exposed to our narratives indicated improved self-perceived confidence in their understanding and application of psychology. In particular, and perhaps not surprisingly, perceived confidence increased in the ability to describe the major fields of psychology and various historical transitions. We also noticed, for example, similar positive outcomes for the students' perceptions of their abilities to apply psychological principles to their everyday lives as well as to other disciplines. We were encouraged by these overall findings, particularly since they coincide with the American Psychological Association guidelines for undergraduate psychology education (American Psychological Association, 2013). It is clear, however, that such innovation would need a more extended evaluation to provide recommending continuation beyond this initial trial. In addition to student perceptions, we believe it would be worthwhile to explore differences in other and future course assessments that may be influenced by such presentations. For example, it may be that students perform better on exam questions related to the research areas of our selected figures, while the content that is neutral to the narratives may remain unchanged. Furthermore, it would be of interest to investigate how students exposed to similar "back stories" perform in more advanced, upper-level courses in the curriculum that draw more heavily on a conceptual and theoretical foundation.

We also suggest that it might be useful to explore varying avenues for providing similar historical exposure to Introductory Psychology students. While we remain partial to the first-person narrative style of our presentations, we acknowledge the challenges to this approach. Since these presentations require a high level of energy and enthusiasm, as well as a significant amount of additional course preparation the first time they are employed, alternative methods could be explored such as having students directly read passages describing similar personal content (such as the letters collected by Ludy Benjamin, mentioned above). At the very least we firmly believe the inclusion of such material is beneficial to students, particularly early on in their exposure to the discipline.

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Chapter 7

Incorporating Multiple Genres into an Experimental Psychology Course

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The general public is highly skeptical with regard to the value of higher education. Current headlines such as *Why a College Degree May Not Be Worth It* (Berger, 2013) and books like *Academically Adrift* (Arum & Roksa, 2011) illustrate the current skepticism within the U.S. about the institution of higher education. Indeed there is a tremendous national focus on how colleges and universities need to better prepare students for employment. In response to this push, researchers have conducted surveys to better understand what employers expect from recent college graduates. A recent survey of employers conducted by the Hart Research Associates (2013) reports that 95% of those employers would prefer to hire graduates with demonstrated skills in effective communication, critical thinking, and the ability to solve complex problems. The respondents rated applicants with these three skills higher in terms of hiring preference than an applicant who completed a particular major. What this should communicate to students, parents, and those of us in higher education, is that these particular skills (effective communication and critical thinking) should be developed in every major.

A common difficulty for faculty preparing their students for the work world is maintaining an appropriate balance between content delivery and skills development. Departments are often tasked not only with delivering the specific learning outcomes associated with the major, but also with institutional outcomes associated with general education. One area that especially seems to feel this tension is the development of effective written communication. Most faculty agree that writing is important and students need help in developing writing skills, but many faculty may not feel comfortable teaching writing, or are unwilling to give up class time to provide writing instruction and practice because of the need for specific content delivery. Because of this, it is not uncommon for writing instruction and practice to be isolated to the freshman composition sequence in many institutions. The tension between content delivery and skill development is not a new one. In the 1970's, the Writing Across the Curriculum (WAC) movement began as an attempt to address the ghettoization of writing instruction by promoting writing in all courses (Russell, 2002). WAC programs often encourage people to view writing as a process for thinking, not simply as a program for learning and using proper written English. Thus, writing for reflection, writing during brainstorming, and having ungraded writing assignments are common components of a school's WAC program (McLeod, 2001).

Growing out of WAC programs is the belief that writing is not simply a generalized skill or action, but that writing needs to be contextualized to specific purposes and audiences. Thus the Writing in the Discipline (WID) approach began to emerge. WID programs emphasize the importance of learning how to write within specific disciplines as being the domain of the instructors in those disciplines, not of freshman composition instructors. In other words, who

better to teach how to write an APA research report than the instructor of the research methods in psychology course?

Of course this statement makes sense and APA style writing is typically taught by research methods instructors. But it should be noted that learning to write within a discipline is much more than simply understanding the formatting rules of our writing (e.g. headings, citation style). Disciplinary writing includes aspects of audience, purpose, voice, and style as well. I have had students who completed their freshman composition course with the ability to organize paragraphs and to use proper grammar, but have not learned to take on the detached voice of a research paper. Other students learned how to incorporate metaphors and foreshadowing in their freshman composition papers only to find it inappropriate to incorporate these stylistic choices into a research report in my Experimental Psychology class. In the past four years of teaching my department's Experimental Psychology course, I learned that students need much more guidance in learning to write within the discipline of psychology than simply instruction on the rules of APA style formatting. I needed to develop the overall tone and style of my students' writing to better match that of the discipline. However, I also believe that students should realize that there are many different forms of writing possible within a particular discipline. Specifically, in psychological research, there is writing for peer-reviewed journals (the traditional APA paper) and there is writing for a general audience (popular press science reporting). To assist in improving my students' ability to understand audience and different style choices, I chose to incorporate both forms of writing in my Experimental Psychology class last year.

My college is currently looking to implement a Writing in a Discipline assessment program so we can evaluate how well our institution helps students progress through specific outcomes associated with effective communication. Faculty in the college created the following set of outcomes:

1. Students will be able to recognize disciplinary genres;
2. Students will be able to recognize disciplinary theories/concepts;
3. Students will be able to analyze the effectiveness of genres in certain situations;
4. Students will be able to discern sources appropriate within the discipline;
5. Students will be able to differentiate and reflect on general vs. disciplinary audiences; and
6. Students will be able to use straightforward language that generally conveys meaning to readers. The language in the projects will have few errors.

A small group of faculty volunteered to pilot delivering these outcomes within appropriate courses. In my Experimental Psychology course, I could have addressed most of these outcomes by having students complete an APA research paper, but I needed to introduce a different form of writing into the course to meet all of the outcomes, specifically to differentiate and reflect on general vs. disciplinary audience and the effectiveness of genre. This additional form of writing became writing popular press articles from information learned from the peer-reviewed journal articles that the students were reading for their own APA papers.

I created these popular press media article assignments specifically to address the outcomes pertaining to recognizing different genres, analyzing effectiveness of a genre in a situation, and differentiating and reflecting on general vs. disciplinary audiences. Students were instructed to

choose one of the peer-reviewed articles that they had read thus far for the class and to write a popular-press science report article with the following characteristics:

1. Eye catching headline;
2. Grabs and holds a general audience reader's attention;
3. Uses everyday language with little or no jargon;
4. Focuses more on the results than background literature or methodology; and
5. Describes importance and application of results for a typical person (i.e. non-scientist).

Students needed some further instruction on what I was expecting after the first assignment. Many of the first popular press articles handed in were simply summaries of the peer-reviewed article and not truly an article for general audience consumption. I led class discussions about who the audience was for this type of writing and gave better clarification of my expectations. The second set of assignments was much improved, and most were extremely interesting to read. In addition to these two popular press articles, students in the course were also assigned to reflect on the difference between discipline-specific writing (APA writing) and general audience writing (popular press writing). Students were instructed to describe how these two genres of writing differed in terms of focus, detail, language, and style. In all, students were able to understand why there are different forms of writing for the different audiences.

Relating back to my original discussion about the perception of higher education and the skills that employers report as important, I am very aware that the majority of my students will never write an APA style paper after they graduate college. Most will go into employment in retail, management, or human services. It is important that students gain experiences in writing with consideration of how to write to different audiences and not simply the narrow audience of the psychology APA research report. My department still values writing in proper APA format and we require our seniors to write a major research paper for graduation. However, if this is the only type of writing development that our majors receive, we are doing them a disservice. Becoming a flexible writer is a necessity and helping students learn how to analyze and judge the effectiveness of their writing for a particular situation will be helpful for their careers in whatever field they find themselves within.

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Chapter 8

Crowdsourcing Your Major: Using Facebook to Encourage Faculty-Student Interaction and Student Engagement

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Mark Zuckerberg founded Facebook (FB) in 2004 as a way to connect students at Harvard (Phillips, 2007). As FB grew, it became accessible to anyone with a .edu email address (and, eventually, anyone with any email address). The academy has taken notice. Researchers have studied the impact of FB on college students as well as the potential of FB for use by colleges and universities. Particular attention has been paid to the role of FB in the successful integration of first year students into a university (Madge, Meek, Wellens, & Hooley, 2009; Ribchester, Ross, & Rees, 2014), as well as how current students perceive the use of FB by their universities (Prescott, Wilson, & Becket, 2013). Other efforts have explored the use of FB pages for classes (Jaffar, 2014; O'Bannon, Beard, & Britt, 2013). While not an empirical report, this essay contains information on using FB in order to reach your university's psychology majors.

We started a FB group for the psychology major at Gannon University, a small liberal arts university. Gannon typically has approximately 30 new psychology majors in every first-year class. The FB group currently has 92 members and, by and large, has been a useful tool in encouraging discussion among faculty members and students, sharing news (related to both our department and psychology), asking questions, promoting events, and as a recruiting tool. We average one new post approximately every 1.26 days, with 56% of posts coming from students. The median number of views for a post is 57, meaning that typically over half of our group members regularly view the page. We will describe some of the positive uses and outcomes of our FB page, as well as issues to consider when creating and moderating a group.

Information Sharing

Our department's FB presence has been a useful way for students to share information about on-campus events as well as broader news stories related to psychology. All group members have the ability to post to the group's wall. As professors, we have posted submission guidelines for research conferences, recruited research assistants, and advertised internal undergraduate research grants. Affiliated student organizations, such as our psychology club and Active Minds chapter, also advertise events via wall postings. Faculty and students have also "shared" postings from APS, APA, and various other psychological organizations with FB presences, leading to discussions among faculty and students about how the article relates back to classes. Both faculty and students feel free to share such posts, although there are certain "power users" among our students who are more likely to post than others. In fact, 68% of our student posts come from just six users; however, this level of participation is well above typical usage reported by other online communities (see for example van Mierlo, 2014).

Although we know that it is potentially risky to grant sharing powers to a group of 18-22 year olds, we have been pleased to see that the majority of postings that students share relate directly back to material covered in their classes. Our FB group has also been a forum for sharing good news, like introducing a new faculty hire (who immediately became part of the FB group), congratulatory messages for students who win awards or admitted into graduate programs, updates from faculty members attending conferences, and the presence of cupcakes in the psychology lounge during finals week.

Members can also share information by posting files to the FB group or create text documents within the group. For example, faculty have posted documents containing information about local behavioral health agencies that have hired our graduates for internships and paid positions as well as a list of resources available for funding for undergraduate research travel.

Faculty/Student Interactions

As noted previously, students and faculty share information relevant to their current and past classes. This has led to the opportunity for conversations between faculty and students that are casual, public, and related to the psychology major. These conversations have not only been useful for generating discussion, but also provide the opportunity for faculty and students to introduce new examples, expanded findings, and brand new research. Faculty have also found these interactions to be valuable in getting a sense of what students are taking away from their coursework, what catches their attention, and in what ways they seem to be learning best. Some students have also used the group as a way to get quick feedback for specific, career or major related problems. For instance, a recent graduate created a posting looking for advice on how to pare down her lengthy resume and another student created a posting looking for information on job leads within the local community. Not all of these postings are purely professional. Our Senior Thesis course inspired a number of postings regarding the extreme difficulty students were experiencing while writing their senior thesis, including one posting in which a student described a nightmare she had about writing her thesis. This led to social support from other students and good-natured teasing from faculty members.

Recruiting and Building Departmental Culture

We also use the group for recruiting. Accepted applicants who express an interest in our major receive a welcome email that contains an invitation to join the group. This introduces incoming students to the major and also helps to introduce students to the culture within the major. The group encourages a culture of achievement and intellectual curiosity by posting photos of students at research conferences and sharing news stories related to psychology. This allows younger students to see what the more advanced psychology majors are doing, and establishes a friendly, casual rapport between faculty and students. Anecdotally, the group may also provide a way to keep students focused on their career and academic goals when they are not physically on campus. Recently, a student who moved out of town for a summer internship commented that the group was allowing her to stay in touch with her major and her university despite the distance.

We also encourage the use of appropriate humor on our page, and approximately 15% of our posts are psychological or academic humor. Interestingly, humorous posts tend to get about

50% more “likes” than other types of posts. The use of humor on the page seems to reinforce a sense of community among faculty and students, and this translates into positive feelings about the major. For example, after one particularly humorous exchange between two faculty members, one student commented “Best. Major. Ever.”, and another composed a post titled “Why my (our) major is better than everyone else’s”.

Alumni Involvement

The group has also been a useful tool for reaching out to alumni and encouraging them to offer advice to current students. We find the polling feature within FB groups extremely useful. With FB polls, you can ask group members to participate in a poll as well as generate their own poll response options. In this instance, we asked our alumni to indicate which class or experience they had while pursuing their psychology degree at Gannon had best prepared them for post-college life. Similarly, we polled group members on possible electives to reintroduce into the rotation of classes, and some of our alumni responded with insight into what they felt was or would have been helpful during their time at Gannon. Current students occasionally post asking for professional or academic advice, and our alumni will often respond to these requests. The involvement of alumni also served a more personal function as we were able to notify them of the failing health and eventual death of a retired faculty member. As time goes on, we hope to have an even stronger alumni presence as current students graduate.

Concerns and Issues

In creating a departmental presence on FB, there is a choice of whether to utilize a Group or a Page. Facebook Pages are for public entities, businesses and organizations who wish to create a social media presence through Facebook (Pineda, 2010). In contrast, Facebook Groups provide a vehicle for communication and discussion for people who share a common interest. Thus, we determined that a group was most appropriate. An additional advantage of using a group is that it allows us to post documents and create a permanent depository for this information for our psychology majors. Certainly, it is important to have a redundant system in place to share any announcements made via Facebook. Departmental emails also share the more formal, major-specific information that faculty members post on the FB group; however, we feel that the FB group is still a helpful way to share important information. With the volume of email received, students may even notice information posted in the FB group more readily.

We also recommend having several professors act as administrators for any departmental FB presence. Administrators approve new members, which is a good way to avoid spam and unwanted advertisements. Administrators receive a notification whenever anyone posts to the group, allowing us to watch out for inappropriate posts. The only time that we have had to use our administrator permissions to delete an inappropriate post thus far was an overly enthusiastic candidate for our student government who was posting campaign-related information to the wall. We simply explained to the candidate that we did not want our group perceived as endorsing any candidate and removed the post. Another way to address this issue would be via a group setting that requires administrator approval of every posting, but thus far (for our group) there has been little reason to restrict postings in this way.

Another concern with any scholastic use of social media is maintaining appropriate boundaries between students and faculty, and this issue is certainly a concern in maintaining a departmental FB group. Although members of the same FB group do not automatically have “friend” status, postings to the group do show up on the feed of members’ FB friends. (We first detected this when one of the authors’ dad “liked” a link that she posted despite the fact that her father isn’t a member of the FB group). While this has not been an issue thus far in our group, a potential issue might arise when, for example, a student might unwittingly post something in the group he or she is uncomfortable having family members view, assuming that FB friends outside the group cannot see the post. Importantly, people outside the group cannot comment on material posted within the group, although they may be able to see that material; they can only “like” within-group posts. Again, group administrators can adjust settings to eliminate this if they wish, and participating members should be aware of the privacy setting of the group.

Finally, some universities may have social media policies that either strictly prohibit a FB page or provide more guidance on exactly what users should share on a page that is associated explicitly with the university. These would be important to consider at a given institution when beginning a departmental FB page. Further guidance on boundary and legal concerns related to student-faculty social media interactions are available in Jones, Gaffney-Rhys, and Jones (2011).

A Final Word

A student once posted to our group, “This page is pretty much the best idea ever.” While hyperbolic, the authors agree that the creation of our FB group has had a positive effect on our department. The page has served our department as a forum to disseminate and discuss information in the form of supplementary class material, current psychological information, academic and career information, and event promotions. It is also a place to build departmental culture and togetherness and a place for students to seek advice. Given that our first set of “power users” have mostly just graduated, we will need to look for ways to maintain the same levels of enthusiasm and involvement in the future. Further, some of the issues discussed here may be worth studying empirically. We would encourage any department that has not yet attempted to create a presence on FB to consider it, as our experience has been beneficial to both our faculty and students.

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Chapter 9

Spark Enthusiasm for Psychological Science by Integrating Laboratory Experiences into Introductory Psychology

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One goal most of us have in teaching introductory psychology is to help students appreciate that psychology is a disciplined scientific exploration of human behavior and mental processes. Having seen and heard TV and radio “psychologists,” some students come to my introductory psychology course with enthusiastic but ill-conceived notions of psychology as common sense, psychobabble, and focused solely on relationship therapy, without understanding its foundation in the scientific inquiry of behavior. Once we introduce students to the scientific nature of psychology, they can suddenly lose enthusiasm in the class, categorizing it as just another dull science course.

Of course as scientists, we know that making discoveries in science can be fun and exciting, but often the thrill of discovery gets lost in the delivery of course content. We might use a few classes to cover a chapter on the scientific method, even excitedly demonstrating experiments in class, and still be vexed as our students’ eyes glaze over while they lapse into content-induced catatonia. It is a challenge to undo years of misunderstanding of psychology and to spark enthusiasm for scientific inquiry, but I believe an answer lies in getting students *actively engaged* in the scientific method through in-class laboratory experience.

The Problem

After a few years of teaching experience, I was troubled that my students often left introductory psychology without knowing what made psychology a *science*. I had developed elaborate worksheets to help my students think about research methods, had walked through the research process in lecture, and had developed in-class demonstration experiments. Nevertheless, students sometimes failed to be able to articulate what made psychology a *science*.

It occurred to me that what was missing to help my students appreciate the science of psychology was *active learning*—actively *engaging* with the scientific method and actually *being* scientists in class. I learned how science works in chemistry, biology, and physics lab classes—not just by listening to a lecture or reading a book, but also by *doing* science. What my introductory psychology students needed was a science lab experience.

Studies of the benefits to student learning provided by laboratory experiences in science curricula suggest benefits for knowledge of scientific procedures and for learning based on inquiry (Nelson, Huysken, & Kilibarda, 2010). Engaging in undergraduate research opportunities (e.g., working in research labs) is also related to increased understanding of, and confidence in, research skills—gains that come from stimulating a student’s *enthusiasm* for the research

process (Russell, Hancock, & McCullough, 2007). But I wondered how I could provide my community college students with laboratory research experiences to spark this enthusiasm.

My colleagues at research institutions would often involve students in laboratory research through their own labs or as participants in their experiments, but students at the community college where I taught had no such opportunities. Research time, economic resources, and space are severely restricted because of the teaching-centric mission at community colleges (Thorsheim, LaCost, & Narum, 2010), thus faculty are not able to create these research opportunities for students. These restrictions made it seem impossible to create opportunities for inquiry-based active laboratory experience.

The Solution

Around the time I was dismissing the idea of lab experience for my students because my college did not have the space or resources, I was selected to attend a National Science Foundation/Project Kaleidoscope workshop for teachers of introductory psychology at community colleges. The objective of the workshop was to develop ways for us to integrate psychophysiology labs into the introductory psychology curriculum. The attendees worked together to brainstorm ideas about how to incorporate laboratory experiences directly into an introductory psychology curriculum without creating a separate lab section and building a laboratory space.

Making the labs a piece of the introductory curriculum is quite easy and feels like a natural addition to the course. For example, when studying the biological basis of behavior and nerve conduction, I use a laboratory based on electromyography (EMG) to help my students see how we might measure something normally invisible—electrochemical nerve impulses and their resulting behavior.

Using simple and inexpensive measurement equipment (Biopac MP40, about \$500), a rich laboratory experience in *doing* psychological science can be integrated directly into my introductory psychology curriculum and my students can participate actively in the scientific method. Doing experiments can be daunting and intimidating to novices, so I think the key to this activity's success is providing students with a template for how to go about measuring behavior and mental processes while also guiding them through the process. I guide them with a set of psychophysiology lab worksheets.

I remembered the type of laboratory worksheets I used in science lab classes to learn the scientific method. These lab sheets provided the template for quickly and easily approaching an experiment, designing it, conducting it, and drawing conclusions. Over a few semesters I used this lab worksheet idea to develop a series of psychophysiology laboratory exercises (available for download from http://archive.org/details/dana_leighton_psychophys_labs) that guide my students through the scientific method and the process of proposing and conducting an experiment. The worksheets contain six sections corresponding to the processes of the scientific method: (a) learn background information, (b) propose a hypothesis and design the experiment, (c) observe behavior and measure data, (d) collect and organize data, (e) analyze data, and (f) draw conclusions.

Learn background information.

I emphasize to my classes that knowledge comes from building on prior discoveries. The lab worksheets provide basic background from the literature on the phenomenon under study. For example, in an EEG lab where students measure differences in neural activity in relaxation and during problem solving, I provide them with findings on the characteristics of brain waves (e.g., amplitude, wavelength), individual differences (e.g., alpha amplitude tends to be higher in extraverted individuals, females tend to have higher alpha frequency), etc. I also describe the procedures used to select a participant (from the class), to induce relaxation and mental activity, and how the neural activity will be measured with electrodes and displayed with software.

Propose a hypothesis and design the experiment.

Using the background and procedure, my students then work in small groups to discuss and to develop a hypothesis for how neural activity will differ between conditions, and the possible influence of other factors such as gender, extraversion, etc. While the other students are busy with their hypothesis development exercise, I take a participant (or two) from the class into the hallway (to keep them blind to the hypotheses) to prepare and apply electrodes. Once that is done, the students have generally finished formulation of their hypotheses and are excited to see if their predictions will be supported.

Observe behavior and measure data.

It is this excitement and anticipation that I believe sustains attention during the data collection and analysis. Acting as the experimenter, I conduct the experiment at the front of the classroom, first demonstrating verbal informed consent, then instructing the participants on the procedure, operating the software and hardware to measure the data, and at completion I demonstrate the debriefing process. During the debriefing process, I probe the participant for indications of why the participant might have responded the way they did. Participants will sometimes reveal very important individual difference factors that may have influenced the results. For example, in one lab on facial muscle EMG as a measure of emotion, the participant showed little activation of one muscle group. On debriefing this participant volunteered that she had a Botox injection the week prior, which could help explain the results.

Collect and organize data.

The students then proceed to collecting and organizing the data. I provide students with an organizational scheme on the worksheet in the form of a table where students can fill in data from the experiment. Using the Biopac software, I walk through the process of quantifying the psychophysiology data, and record the values for each of the table cells, displayed on the classroom's projection system, and help students calculate basic descriptive statistics: means, differences between control and experimental conditions, etc.

Analyze data.

The worksheet then contains an area where students can summarize the results from the data table into more readable form: it provides the basic context and a fill-in-the-blank area where students can enter the values from the data table. For example: "The alpha frequency was _____ Hz. The alpha amplitude for the problem solving condition was _____ % _____ (more or less) than the control condition." We then discuss these basic findings in

the context of the background literature—does it agree or disagree with prior research? Why do you think that might be? This leads into the final step on the worksheet.

Draw conclusions.

I lead a discussion of procedural problems the students noticed or individual difference variables they propose might affect the results. Finally, and most importantly, the lab worksheet has a section for students to explain what they can conclude from the experiment. In this section, I ask them to state whether—and why—their hypothesis was or was not supported by the results. I also ask them to propose changes they might make in the experimental procedure or individual difference data they would collect to help draw better conclusions. I am often impressed with the cogent and insightful responses on this section of the worksheet. This is where I see the depth of students' understanding of the research process: they often spot problems with non-random sampling, non-random assignment to conditions, situational factors such as distraction, individual differences such as amount of sleep, gender, etc., and readily suggest changes for the experimental procedure to help mitigate these potential problems.

This step stimulates critical thinking and helps students see the science of psychology as an ever-improving and active process in the search for knowledge. To help them see this process, I emphasize that experiments are not an end point, but rather one more step along the path to knowledge that is constantly accounting for new emergent properties and concepts that only come about through the process of making errors (and discoveries). This emphasis, I believe, helps drive the excitement and engagement that my students have with the labs, and perhaps makes science a little less intimidating.

Assessment and Moving Forward

I have not collected any data comparing learning outcomes for students using my psychophysiology lab exercises compared to those not using the labs. Given that prior studies showed no direct support for lab experiences having an effect on content learning (Nelson, Huysken, & Kilibarda, 2010), I suspect exam scores might not be affected. However, I believe that the labs could positively impact learning outcomes for knowledge of research methods, application of scientific methodologies to problem solving, and greater interest in science as a career. These would be worthwhile effects to study in the future.

I have collected end-of-semester evaluation data on student assessment of the usefulness of the labs, and the data show that students believe the labs to be useful tools for the classroom. I use a simple “keep-stop-change” assessment tool to find out what single thing students think I should keep doing in class, one thing I should stop doing, and one thing I should change. This is a spontaneous free-response question, and students identify a variety of classroom behaviors I should keep, stop, or change. Students have most frequently identified the labs as the one thing I should keep doing, and rarely identify it as something to stop. This gives me some confidence that the labs are at least engaging, perhaps fun, and students might even find them to be a valuable learning opportunity.

In my case, I only have one Biopac psychophysiology transducer device, so I have to act as experimenter at the front of the classroom. I know of colleagues who have applied for small grants to purchase multiple devices so students can work together in small groups to conduct

the labs more independently, learning as they go through the process. I believe this would add to the engaging nature of the activity and plan in the future to move in this direction.

The psychophysiology lab experience also provides a route toward a trend emerging in secondary and post-secondary education: the “flipped classroom.” This pedagogic method involves moving content delivery outside the classroom, reserving class time for active learning (Talbert, 2014). For example, lecture content for nerve conduction could be delivered online as a homework assignment prior to class, while class time would be dedicated to a lab experiment measuring muscle recruitment using EMG.

Conclusion

Undergraduate research opportunities stimulate interest in STEM careers and graduate study (Russell et al., 2007). While some of these experiences will include intensive work in research labs, the critical factor in this stimulation seems to be the inculcation of enthusiasm rather than the intensity or nature of the experience. It is likely that engagement in active learning through in-class introductory psychology lab experiences like the ones I have described can be a first step toward the development of enthusiasm for science and the scientific method. For some of our students, introductory psychology may be their first, and perhaps only, science class. We have an imperative to give them a rich, stimulating, and effective introduction to the scientific method, and to give them the chance to experience what *doing* science feels like, so that they can better decide whether STEM is right for them.

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Chapter 10

There Has to Be a Better Way! Using a Case Study Approach to Information Literacy Instruction in Psychology Courses

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Our journey and the development of our instructional process began with conversations about observations of students' work. As a faculty member, Amanda had the experience of walking through the library and noticing a group of her students working on their projects. As she stopped to say hello, she observed her students conducting research. Her observations revealed some very interesting behaviors. The students were typing their whole research question into the database search box, and they were selecting "full text only" as a means of obtaining sources! In addition, as an academic librarian, Vivian has had the experience of students coming to the reference desk for research consultations only to hear them say: "I've been here for two hours and I can't find any articles on memory" or "I've found sources, but they aren't what I am looking for."

While our observations within our own institution were meaningful to us, they weren't enough to go on. We felt compelled to seek current information about the relevance and importance of information literacy (IL) skills in psychology. We found discussions about minimum standards of library instruction for psychology majors, including specific skills such as developing an awareness of sources available, locating and evaluating sources, and conducting literature searches (Merriam, LaBaugh, and Butterfield, 1992). We also found consistent messages from the American Psychological Association (2006; 2013) and the Association of College and Research Libraries (ACRL) (2000; 2014 currently under public review) as to the importance of such skills. Even employers have noted the need for additional focus in higher education on skills (Hart Research Associates, 2010; 2013). The emphasis that employers place on skills is clear from a survey of employers that revealed that 68% of the sample reported a need for a greater focus on "the ability to locate, organize, and evaluate information from multiple sources" at the college level (Hart Research Associates, 2010, p. 2). When the same question was asked again in 2013, 72% of employers sampled responded that more focus is needed on this skill (Hart Research Associates, 2013). We were struck by the consistency of this message from multiple stakeholders and we believe that it indicated a need for targeted instruction to enhance these skills at the collegiate level.

With these messages in mind, we began to think about ways to make the research process clearer to students. We realized that when we distribute assignments and collect them on their due date, we do not see the students actively engage in the research process itself, resulting in somewhat of a "black box." As instructors, we see students demonstrate a wide range of abilities when meeting the expectations of their assignments. We wondered if this may be due to the lack of IL instruction. Even when we provide IL instruction, there may still be variability in

student performance if they don't use the sources or skills they are taught. This led us to reexamine how we teach these skills.

We started this process by thinking about the issues that we identified at the reference desk and by talking to students about their frustration in locating sources. We know that traditional IL instruction has many drawbacks. Most of the time it is "fit into" a class rather than being a central part of it, so that the topic can't be covered completely. Also, the session may be scheduled too far in advance of the assignment, so students may not understand how the resources being demonstrated are relevant to them. In addition, when students begin to do their research they may not recall what the librarian demonstrated so the skills are not retained. Finally, in traditional IL instruction students simply observe the demonstration of the library catalog or databases so they do not have the opportunity to practice these skills.

In gathering research, we found that IL instruction should be embedded in psychology courses where it is appropriate to the course or assignments (Merriam et al., 1992). We also found that the research stressed that there should be faculty-librarian communication before the start of the IL instruction and explicit explanation of IL outcomes to the students. The literature also highlights the importance of collaboration between faculty and librarians (Birkett & Hughes, 2013). With these ideas in mind, we designed an approach to our instruction using a case study built around a theme and connected to course content. Because the instruction is now an integral part of the course, it is scheduled on the course syllabus and it is consciously tailored to the assignments. Students are made aware of the instruction in course documents and in introductions to instructional sessions. Perhaps most importantly, students practice the skill demonstrated immediately following the instruction, so it reinforces what they learn.

With this method, we follow a clear, stepwise process to teach and to reinforce IL skills within psychology course content. In the first session, we introduce the case and we demonstrate the process of evaluating websites. For example, in a developmental psychology course, we use a case narrative in which a parent must make a decision about whether to give his or her child the measles, mumps, rubella (MMR) vaccination after having a conversation with a friend who has said that the MMR vaccine may cause autism. We use the method that most students do when looking for websites: we "Google" the topic. We try to choose sites that will help students learn to question and to critically evaluate websites. We select "glossy" sites that look legitimate (often ".coms") but that only contain anecdotal evidence. After reading both the case and the website materials, students take the perspective of the parent and make an initial decision about giving the child the MMR vaccine. Students then work from a handout that contains some standard criteria to use when evaluating websites (Authority, Accuracy, Coverage, Currency, Objectivity and Relevancy) and they are strongly encouraged to take careful notes while the librarian demonstrates the website evaluation process. These notes will be useful when students are asked to evaluate the second website that they are assigned, as well as when they need to evaluate web resources for their semester assignments. We discuss the nuances of website evaluation and explain that they must consider all of the criteria in order to arrive at an overall decision about the website. We ask them to consider the legitimacy and the usefulness of the website while keeping their own personal information need in mind. Finally, we talk about the need to seek out legitimate research and solid data

when making decisions, including the essential lesson that resources found on Google are not the same as peer-reviewed resources.

In the next session, we move the discussion from the need to use peer-reviewed literature to how to actually find these sources. We explain that we will be showing the students how to search the PsycInfo database effectively and that once they practice and master this skill they will be able to use it in other classes and in their professional lives. We repeatedly stress this point since students often ask why these skills are important to them and we want them to begin to understand that IL skills are valuable and personally relevant. For the demonstration, we choose the search terms from the case, we teach how to use the thesaurus, and we demonstrate a Boolean search of each set of variables separately and then by combining the terms. We demonstrate the search process step by step and record it on a literature search log. At each step of the process we ask students to make a decision about whether they should continue searching or look at their results. The final step of the process is review. This step occurs when all the terms have been properly combined, the search has been run, all relevant limiters (such as peer reviewed, English, etc.) have been applied and there is a reasonable number of results. To emphasize the importance of the search log, we require the students to use it when working on their own semester assignments. We also ask them to bring a completed search log with them whenever they meet with either of us. The log is a valuable tool that helps us to quickly identify issues and to work with the students in a more focused way. We also find that the log encourages students to try the process on their own before coming to us for help.

In the two years that we have been using this method, we have learned several lessons. One of the things we learned is that we can easily integrate this method into a course. By creating a case that is connected to course content, we are able to help students develop IL skills in a more interesting and relevant manner than with traditional IL instruction. In our initial assessments, we found that students who received the case study instruction, as compared to the traditional instruction, demonstrated significantly more sophisticated levels of IL skill on both an essay and a standardized assessment measure. We are encouraged by these results as they suggest that this approach has real potential.

If you are considering using this approach, here are some challenges/recommendations to keep in mind:

- Creating the first case can be very time intensive since you need to identify what content you want to cover and what you want to emphasize. But don't let that stop you! It does get easier once you choose a structure that works for you, and adapt it to your other courses.
- Finding case study materials can be a challenge. Sometimes you might come up with a great idea for a case only to discover that you can't find just the right website to use. But that is part of the fun of developing cases. You may start out with one idea and segue into an entirely different topic depending on where your research takes you.
- You need to carefully plan and choreograph the class sessions to ensure that they go smoothly which requires pre-planning on your part. This involves finding the right websites, video content (if applicable) and search terms so that you can prepare

handouts and keep the emphasis on the skills being demonstrated rather than floundering around for search terms in a live session.

- It's also important to maintain the currency and novelty of cases so that they are relevant to students and aren't shared from semester to semester by future students.

We find that using this method keeps us more energized in our professional roles. Teaching this way offers us the chance to experiment and “mix things up” so that we aren't bored with the same old teaching methods. It's fun and engaging, which hopefully translates to a better experience for our students too.

We also are able to demonstrate problem solving by collaborating during class sessions, so students are able to see our individual approaches to a common problem. We also find that we have more productive consultations with students since they receive consistent messages from us regarding assignments and expectations. Since we are both well aware of course content and outcomes, we're able to work more efficiently with students when they come to us for help. We provide students with opportunities to reinforce their skills both inside and outside the classroom. We get to work with students during class sessions where they can practice their skills, and we schedule individual research consultations outside of class if they need additional help. Finally, we teach with case studies to emphasize the importance of IL instruction and we stress that students will be able to apply the research skills in their other courses as well as in their personal and professional lives.

We encourage psychology faculty to try this method in their own classes, even if it is in a limited way. Consider starting with one class session (for example a web evaluation session) to see how it works for you. To ensure that the instruction is valued by the students, we really recommend that you embed it in your class by scheduling it on your course syllabus. It is also important to fully document the IL process on class handouts so that students have a concrete example of the steps involved in the process. We believe that this case study method of teaching IL helps to eliminate the mystery of how students conduct research (the “black box”) to complete their assignments and will help to prepare them with the 21st century skills needed for an ever changing workplace.

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Chapter 11

The “I Am Not Creative” Myth

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All my life I have said of myself, “I don’t have a creative bone in my body.” For reasons I may never be able to uncover, I have included in my definition of “creative” aspects like “easily,” “naturally,” or “automatically.” None of those are true of me, therefore I am not creative. That is what I used to believe. Now I believe my definition of creative was wrong. Walk with me on my journey to that conclusion.

Recently, I found myself reflecting on the text for my developmental psychology class, John Santrock’s, *Essentials of Life-Span Development*. In it he says that creativity continues to grow through middle-adulthood. He talks about how Mihaly Csikszentmihalyi interviewed 90 leading figures in art, business, government, education, and science to learn how creativity works. What he found were steps individuals can take to become more creative, beginning with “cultivate your curiosity and interest.”

I also had the opportunity to hear Dr. Robert Sternberg’s presentation at the conference of the Oklahoma Network of Teachers of Psychology. He spoke on teaching for successful intelligence, based on his triarchal model of intelligence. According to his model, successful intelligence includes analytical intelligence, practical intelligence, and creative intelligence. I was already familiar with his model, teaching it in my intro to psych classes but I had assumed the “creative” part of intelligence had to be natural. In his lecture he indicated that teachers can teach in a way to increase creative intelligence.

I used my cell phone to go to Amazon.com to buy his book, *Teaching for Successful Intelligence*, while he was still speaking. It is sitting on my desk now, with a post-it note at the section on teaching for creative intelligence. It is filled with concrete strategies teachers can use to encourage and foster creativity in their students.

Anyone can be creative. For some, it may come “naturally” (easily). For others, it comes only with intentional, focused effort. The results are the same: ideas or products that are unusual or unexpected, or solutions to problems that are unique. Those results are the definition of creative, not how easily they came.

I wonder if the reason I never considered myself to be creative is because I had teachers that taught to analytical intelligence and practical intelligence, but none that taught to creative intelligence. I do not remember any teacher telling me that anybody can be creative. If they did and I just was not listening, I apologize to them.

Teachers, you can foster creativity in your students!

Make sure you clearly state that being creative does not mean being born creative.

Creativity is creativity even when it has to be worked on. For some, it will come more easily, but that does not mean they are more creative. “More creative” must be defined only in the amount of creative output, not the ease with which it is produced. I am uncreative only if I do not produce that which is unusual, unexpected, or unique.

In my psych classes I try to use the multiple opportunities my curricula give to discuss this topic even though the textbooks themselves might not always emphasize, or even mention it. In General Psychology’s chapter on intelligence there is discussion of creativity and how it is not the same as intelligence, even though Sternberg’s triarchal model of intelligence for success includes “creative intelligence.”

In Developmental Psychology, creativity can be part of each developmental stage’s cognitive development since creativity is a function of how we think. For example, I have had each of my students ask two children two questions each: “Can you tell me some things that are red?” and “Can you tell me some things we can do with a spoon?” Class discussion of the answers centers around which answers were creative and which were not, and why. “Fire engines” is not creative, while “newspapers” can be (if the child knew they were making a play on words). The “and why” is important in this discussion as it forces my students to process the answers in light of the definition of creative.

In Personality Psychology, creativity is one element in how we differ from each other. While discussing the Big 5 Theory of personality we might explore whether creativity might show up more in a strong “O” (Openness to new experiences) personality or a weak “O” personality, and why. The “and why” is important as it drives the students toward critical thinking.

In Social Psychology, we talk about the influence of others’ creativity on our own. I might use the quote from ancient literature, “As one stone sharpens another, one person sharpens another,” and ask my students what that means, and how it might apply to creativity. “How might being around creative people spark creativity in others?” Or, “When did someone else’s creativity spark creativity in you?”

Change your expectations, as well as your students’ expectations for creativity.

Expect creativity in every student. I try to give opportunities for creative exploration in my classes. For example, I usually talk about how hard I personally have to work at being creative but then show some of my “creative” projects that I have completed. For example, I either perform for my classes, or show the Youtube videos of songs I have written on psychology, *Psychology Begins with a “P”* (<https://www.youtube.com/watch?v=x167YhVq0oQ>) and *Freud Didn’t Start Psychology* (https://www.youtube.com/watch?v=B9y_IyQt0NU), which “borrows” a melody by a popular song writer. I then “challenge” my students to do the same, either with an original melody or their words put to a popular melody. Of course, bonus points are given! Variations of this project can be poems, rap, and even visual art representing a psychological concept. Class time is freely given to students who respond to this challenge.

Include divergent thinking in your lesson plans in addition to assignments that develop convergent thinking.

Where convergent teaching would ask, “What is John Watson most famous for?”, divergent teaching might ask, “What were some of John Watson’s contributions to psychology?” Or, “Which of John Watson’s contributions interest you the most?”

Become intentional students of others’ work on creativity.

I do not try to reinvent the wheel when I can creatively adapt, or use a “wheel” someone else has devised as a springboard. For example, I have found Sternberg’s “twelve strategies” for teaching creative intelligence, in his *Teaching for Successful Intelligence (2000)*, stimulating and motivating. He begins by writing, “Teachers should encourage and develop creativity by teaching students to find a balance among analytical, creative, and practical thinking... Following are twelve strategies that develop creativity” (p. 57). No, I am not going to list his strategies here. “Look it up. You’ll remember it longer.”

I encourage you to...

- (1) redefine “creative” for yourself and for your students.
- (2) model creativity for your students.
- (3) expect creativity and thus unleash the power of expectations.

References and Resources

Here are some resources I have found helpful in my own quest to do those three things:

Oklahoma DaVinci Institute’s online creativity repository, DART (DaVinci Academic Research Tool). <http://davinciok.org/dart/>.

Creative Oklahoma. www.stateofcreativity.com.

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Chapter 12

“Academics in Action” to Promote Engagement in General Psychology

Rebecca Singer

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Dual credit courses are college level courses that are offered to high school students before they graduate. Course credits are applied toward required hours for their high school graduation and count as transferable college hours. Some of the benefits of dual-credit courses include increased interest in applying to college, increased preparedness for the rigors of college coursework, and increased connections between a college or university and the local community.

Although there are several benefits to offering dual-credit courses to high school students, one concern is that students may be unprepared for the type of tasks required of them in a college-level course. High school students may not be as cognitively prepared for the course material. For example, Roderick, Nagaoka, and Coca (2009) found that only one-third of high school students met the minimum requirements for college readiness. In addition, a 2012 American College Test (ACT) report indicated that only 25% of students taking the ACT demonstrated proficiency in all four levels of English, Math, Reading, and Science.

One goal of many college courses, including my own, is to increase critical thinking skills. The American Psychological Association identifies critical thinking as a primary goal for undergraduate psychology majors stating that undergraduate psychology majors should be able to “engage in innovative and integrative thinking and problem solving” (APA, 2007, 21). Bloom’s Taxonomy (Bloom, 1956) is commonly used to identify how to integrate critical thinking exercises into the classroom. The original version classified learning as following a progression in the following order: knowledge, comprehension, application, analysis, synthesis, and evaluation. A revision of Bloom’s Taxonomy categorizes learning in the following categories: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001). Research indicates that many college undergraduates aren’t good critical thinkers, and can’t recognize, let alone, make relationships among concepts (Mulnix, 2012). High school classes may be primarily foundational, focusing on memorization and basic understanding of concepts. These skills would be best represented as *knowledge* and *comprehension* in the original Bloom taxonomy and *remembering* and *understanding* in the revised taxonomy. The question I had, therefore, was how to help these high school students succeed in a course that they may be ill-prepared to take. I had taught General Psychology as a dual-credit course several times in the previous years, but as I developed the course curriculum for the dual-credit class in 2013, I focused on the applying, analyzing and evaluating levels of this taxonomy. I reasoned that additional practice with these skills (application, analysis and evaluation) might serve two purposes. First, I wanted to increase understanding of general psychology concepts being taught in the course. Second, I wanted to better prepare students for upcoming college courses.

I wanted to see how engaging students in the material on a deeper and more personal level would affect both exam grades and paper grades. I did this by incorporating writing assignments that required the students to manipulate the material rather than memorize the material. I compared exam, paper, and final grades between a 2011 and 2013 General Psychology dual-credit class at a private, Christian high school.

The students in these dual-credit classes were juniors and seniors. I used the same assignments and course requirements as I do in my “normal” General Psychology classes taught at Georgetown College. However, I introduced a set of assignments that I called “Academics in Action” for the 2013 class. These assignments were a combination of exercises from the course textbook, Weiten’s (2013) *Psychology: Themes and Variations (9th ed.)*, as well as application exercises that I prepared myself. I categorized each assignment as an application activity, analysis activity, or evaluation activity.

In general, application level activities encourage students to use a concept they have learned in a new way. Application activities in the general psychology dual-credit course encouraged students to use a classroom concept from a previous lecture period and apply that concept in some way to their own life. While some researchers believe that students fail to think critically because they are cognitively incapable, others believe the failure is more the result of a lack of motivation and interest (Gray, 1993). I thought that providing an opportunity for students to personally engage with the material might make the material more relevant and increase their motivation to think critically. The following are examples of application exercises I used.

Application Example #1:

What methods do you use to deal with stress? Which ones are effective and why? Which ones are ineffective and why? What have you learned from this reading that you can now apply to your own life?

Application Example #2:

What are the effects of sleep deprivation? Have you noticed any of these effects in your own life? How might you adjust your schedule to get more sleep (be practical and specific)?

Application Example #3:

Describe the basic classical conditioning procedure. Next, choose a real-life example of classical conditioning. Explain what the unconditioned and conditioned stimuli as well as the unconditioned and conditioned responses are in your personal example.

The next type of activity I incorporated was a set of analysis activities. Analysis involves a student being able to break down a concept into its component parts for better understanding. It also encourages developing skills in recognizing patterns and how elements relate to one another. Mulnix (2012) suggests that students rarely have the ability to recognize “even the simplest of evidential relationships” (p. 474). My analysis activities involved reading a summary of a relevant research study and evaluating the argument provided. The following are examples of analysis exercises used in this project.

Analysis Example #1:

Read the featured study from on page 259 of your textbook about observational learning and aggression. This study presents Bandura's Bobo doll experiment that we discussed in class. Explain the study and analyze the author's argument. Finally, provide an opinion about whether you think violent media (tv, movies, video games) contributes to real life aggression. Why or why not?

Analysis Example #2:

Read the provided articles on the role of fathers in childhood development. Summarize the author's main arguments. Provide an opinion about whether you think development is affected by a father's presence and if so, explain how.

The third type of activity I developed was a set of evaluation assignments. Some high school students (and even college students) may have difficulty distinguishing between facts and opinions. I wanted my students to begin to learn how to assess both the credibility and conclusions of an argument. Braithwaite (2006) indicates that a primary failing of students is their inability to construct effective arguments. In other words, students may have difficulty formulating their own opinions and supporting those opinions with fact-based evidence. They may simply report another's opinion, or present their own opinions but without supporting statements. My evaluation activities involved comparing competing theories and providing evidence-based arguments for or against them. One goal of this set of assignments was to encourage students to think about different viewpoints and assess the legitimacy of the evidence provided in support of each. The following are examples of evaluation assignments used in this project.

Evaluation Example #1:

Evaluate the personality theories we discussed in class (Psychodynamic, Behavioral, Humanistic, Biological and Trait theory). Summarize the major "beliefs" of each theory then provide a personal evaluation of the theories. Which theory do you think is the best? Focus on providing supportive statements for your opinion(s).

Evaluation Example #2:

Read the critical thinking application on pages 308-309 from your textbook and the supplemental article about eyewitness testimony. In addition, watch the provided videos on memory accuracy. Write a reflection paper that summarizes the evidence for and against the use of eyewitness testimony. Finally, provide a recommendation for or against the use of this type of evidence in court cases.

To assess whether the "Academics in Action" assignments aided in student understanding, I compared the 2011 class with the 2013 class on several graded components. I looked at their four non-cumulative exams, their 3 papers, and the final course grade. Grades on all assignments were higher in 2013 than in 2011. For the class that received the enhancement activities, student exam grades were almost a full letter grade higher than for the class that had not received the analysis, evaluation and application exercises. I also looked at the number of students who were struggling, as evidenced by earning a "D" or an "F" on an assignment. The

number of failing grades was lower over all categories (exams and papers) for the class receiving the supplemental activities.

Anecdotally, students appeared more engaged during classes and were more responsive during class discussions. Students asked more questions and were willing to share appropriate personal experiences to illustrate topics being discussed in the classroom.

Overall, the inclusion of this set of assignments appeared to be successful. The students were similar in prior ability and the same number of juniors and seniors made up each year's class. The class assignments, teaching style, and lecture materials were identical in the two years. Yet, it appears that the inclusion of application, analysis, and evaluation exercises may have improved the students' ability to think about and manipulate the concepts within each chapter. Students also indicated more interest in psychology as a discipline. I believe this may be because they were able to extrapolate from class and see the real-world connections.

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About the Editors

William S. Altman is a Professor in the Psychology and Human Services Department at SUNY Broome Community College. Dr. Altman earned PhD and MS degrees in Educational Psychology and Measurement, and an MPS in Communication Arts (Organizational Communication) from Cornell University, as well as a BA degree in History from the University of Pennsylvania. His research interests include effective teaching and learning, and creativity. Bill currently serves as the Society for the Teaching of Psychology (STP)-National Institute on the Teaching of Psychology (NITOP) Liaison, and the co-editor of STP's *E-xcellence in Teaching*. He also has served as the consulting editor for two introductory psychology textbooks, and has created numerous learning and teaching materials for several publishers. In addition to scholarly publications and presentations, Dr. Altman has written for several non-scholarly publications, spent over a decade sharing information about education, technology, and psychological science on local radio, been a professional photographer, and performed in theater and as a standup comic (ostensibly to work on classroom presentation skills, but mostly because it's fun). In addition to presenting many workshops and seminars about effective teaching and learning, he has also contributed over a dozen videos on effective teaching, as part of the [Wadsworth Guest Lecture Series](#). Dr. Altman also consults on the development of effective teaching materials and techniques for applications in other fields. For example, he assisted the New York State Department of Environmental Conservation in developing their training manual for nuisance wildlife control operators (available online at [NWCO.net](#)) and in creating and validating their statewide licensing test. Most recently, with award-winning science fiction author Jill Shultz, he began offering workshops to train fiction writers and actors to use psychological science for character development. Bill Altman is driven by a wide and unpredictable curiosity, an almost pathological need to solve problems, and a sense that it all ought to be fun.

Lyra Stein is currently a faculty member in the Psychology department at Rutgers University. Dr. Stein earned a BS degree in Psychology and Biochemistry and Molecular Biology from Rutgers University, an MS in Neuroscience from Albert Einstein College of Medicine and an MS and PhD in Social Psychology from Rutgers University. Her research interests include performance and learning based on personality orientation. Dr. Stein currently serves as the co-editor of the Society for the Teaching of Psychology (STP)'s *E-xcellence in Teaching* after serving as the Member at Large, Research/Academic Focus for APAGS and a regional representative for STP. In addition to publications, presentations and advising student projects, Dr. Stein is currently working to enhance online education and online course conversion, including the Rutgers University signature course Soul Beliefs. In 2012, Dr. Stein won the Rutgers University award for distinguished contributions to undergraduate education and, as well as teaching classes in general psychology, social psychology, abnormal psychology, personality psychology and research methods and graduate classes in social and developmental psychology, Dr. Stein has created several classes including Myths and Misconceptions in Psychology which explores the validity of psychology in the popular press.

Jeffrey R. Stowell earned his BS and MS from Brigham Young University and his PhD in Psychobiology from The Ohio State University. He also did one year of postdoctoral research with Dr. Janice Kiecolt-Glaser at OSU on marital stress and wound healing. He currently is a Professor of Psychology at Eastern Illinois University in Charleston, Illinois where he teaches courses in biological psychology, sensation & perception, learning, introductory psychology, and controversial topics in psychology. In 2006, he received the Early Career Teaching Excellence Award from the Society for the Teaching of Psychology. In 2012, he was awarded Eastern Illinois University's Faculty Laureate for excellence in undergraduate general education classes. His research interests include using technology in teaching and stress-health connections, particularly in the context of test anxiety.