

## Teaching Psychology Students to Think like Psychologists

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### A VEXATION

It may seem like the height of narcissism, but I am concerned that after 4 years of undergraduate training in psychology, graduating seniors in my department do not appear to think like me. Let me try defining the problem differently. I fear that Weber State students graduate with undergraduate degrees in psychology without adopting core beliefs and values of the discipline, particularly that the discipline is a scientific one.

If there is a problem of sort I am describing, the failure does not reflect our students, faculty, or the curriculum. Our otherwise competent students received first-rate training in the discipline: Excellent faculty members teach a disciplinary-approved curriculum which includes opportunities for research and practicum experiences. Indeed, my vexation is to identify the source of the problem: **Why is it that offering standard training is insufficient to ensure that psychology students adopt core disciplinary beliefs and values and what kind of training is necessary to promote students thinking like psychologists?**

The claim that psychology students do not overcome misconceptions about the scientific status of the discipline results from my 6 years of conducting assessment research. I have used a variety of measures to assess the issue, but the most productive one has been the *Psychology as Science* (PAS) questionnaire (Friedrich, 1996). It is a reliable and valid assessment of students' belief (from 1= strongly disagree to 7= strongly agree, with 4 = neutral) to a set of 15 statements about the scientific nature of the discipline, including the following:

1. Psychological research can enable us to anticipate people's behavior with a high degree of accuracy.
2. Research conducted in controlled laboratory settings is essential for understanding everyday behavior.
3. Psychological theories presented in the media should not be trusted unless they are supported by experiments.

In a recent study, Holmes (2008) tested psychology instructors and their students and found large discrepancies between them, reflecting a stronger belief in psychology as a science among instructors than students. A large ( $N = 420$ ) assessment study of Weber State students in psychology courses across the curriculum revealed skepticism with regard to the science of psychology (Amsel, et al., submitted). The mean was a weak agreement (overall average score of 5.18 on the 7-point scale) with the proposition that psychology is a science and only minimal change from freshmen to senior year. There was no synchrony between PAS scores and scores on a measure of students' knowledge of the process of science (TIPS test). Holmes & Beins (2009) conducted a similar study with psychology students at Ithaca College, a small elite liberal arts college. They found no changes in PAS scores across students in courses at different levels of the curriculum and no correlation between PAS scores and scores on a measure of scientific literacy.

In another study (Amsel et al., in press), we found out that Introductory Psychology students could easily adopt their professors' beliefs and scored higher on the PAS when randomly assigned to answer from their Professor's perspective than their own (Self). This Perspective effect ( $M$  Professor - Self = .36) was compatible in size to the Academic Year effect ( $M$  Senior - Freshmen = .38). In another study, Introductory Psychology students' internalization of disciplinary beliefs was related to their ability to adopt their professors' beliefs (Amsel, in preparation). Specifically, the extent of the increase in Self PAS scores from the beginning to the end of the semester for Introductory Psychology students was related to their Time 2 Professor scores ( $r = .61$ ,  $N = 96$ ,  $p < .001$ ), independently of Time 1 Professor scores, demographic variables, and academic variables. Moreover, these students' ability to adopt their professors' beliefs was related to their academic success. A stepwise multiple regression found that only Time 1 PAS Prof scores predicted students' Introductory Psychology final course grade ( $\beta = .27$ ,  $p < .01$ ).

The results of these studies point to the fact that psychology students who graduate from very different institutions do so without fully adopting core disciplinary beliefs and values. It is not that the students are ignorant of those beliefs and values or conceptually incapable of grasping them. The students are just skeptical about the scientific status of the discipline, not unlike others in and out of academia. The extent to which students overcome their skepticism and adopt disciplinary beliefs and values appears to be related to their ability to entertain their professors' disciplinary beliefs, which also promotes the students' academic success in their psychology course.

### A VENTURE

My venture begins with a proposed solution to the general problem of otherwise competent and well-training psychology students not adopting key disciplinary beliefs and values. Learning to think like a psychologist is a challenge because the everyday intuitive account of mind and behavior is incompatible with the scientific one. Folk Psychology, as it is called, is a well ensconced intuitive theory which is believed to be evolutionarily-shaped, uniquely human, and maybe innate (Baron-Cohen, 1999; Bloom, 2004; Bloom & Weisberg, 2007). Folk Psychology holds behavior is controlled and directed rationally by personally accessible mental states (beliefs, desires, hopes, wishes etc.). Folk Psychology is conceptually powerful understanding of mind and behavior which is foundation for social relations and cultural institutions (e.g., the legal system). However, there are working assumptions that are inconsistent with Folk Psychology, which students must adopt if they are going to perform scientific research in psychology or accept the products of such activities. A scientific psychologist must accept that behavior is predictable (as opposed to agents having free will) and due to causes that are outside awareness (not accessible) which are measured objectively (not personal).

A solution to the vexation does not appear to require a radical restructuring of students' understanding of mind, but a change in pedagogical philosophy which would promote students' acceptance of the working assumptions of scientific psychology. Psychology instructors must understand that they are in the business of identity change and not just knowledge transmission. Although limited in scope, the process of identity change I am proposing focuses on instructors sharing their professional beliefs and values with students and supporting students' reflection on and adoption of those beliefs and values.

I have adopted an instruction style in which I am committed to transforming students' identity as scientific psychologists by being explicit about not only the scientific basis for various claims in a lecture, but also my beliefs and values which justify presenting the information. I characterize this as *metainstruction*, as it not about the topic instruction, but about the professional beliefs and values which lead me to think the information being presented is significant. I am convinced that undergraduate psychology students need more metainstruction but that their instructors are reticent to do so, emphasizing knowledge transmission instead. This is reflected in assessments which typically measure the success of knowledge transmission in contrast to students' adoption of the beliefs and values of scientific psychology.

Part of my venture has been to convince other instructors in my department, college, and discipline of their *responsibility* to go beyond knowledge transmission and promote change in students' disciplinary beliefs and value. My argument is to present instructor's *academic* responsibilities to students as equivalent to their *ethical* responsibilities to others or *fiduciary* responsibilities to loved ones. In no case is failure justifiable without close scrutiny of whether one could have done better! But I have met mostly resistance to the notion that instructors are responsible for promoting change in students' beliefs and values.

But I think that this argument needs more evidence. I plan to experimentally test whether faculty teaching techniques motivate students' learning not only of the academic content but also of disciplinary beliefs and values. Students high and low in PAS scores will be randomly assigned to read a textbook-like passage about a claim which challenges Folk Psychological beliefs in one of four randomly assigned conditions. In two conditions, students will read the information with or without the details of the scientific evidence for the claim and in two conditions they will read the information with or without metainstructional material added to the passage. Assessment will include verbatim representations of the information (surface recall), comprehension of the significance of the finding (deep understanding) and appreciation of the experimental data (adoption of disciplinary beliefs and values). I predict a three-way interaction between student background (PAS score) and presence of both scientific evidence and metainstructional information on assessment performance.

This venture, of recognizing instructor responsibility in teaching for identity change and not just for knowledge transmission, profoundly invests in social capital as it requires instructors to share their professional identities with their students and with each other. The sharing of core disciplinary beliefs and values is based on a social constructivist approach to learning (cognitive apprenticeship model e.g., Collins, Brown, & Holum, 1991) which emphasizes the relationship between instructors and students as dynamic part of the learning process.