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A Curious Thing Happened On The Way To Constructivism...

By Sherry Herron

The author makes a case for including interpersonal-skill development into the instructional preparation for future professors and other educators.

I worked closely with four graduate teaching assistants to design and deliver a biology laboratory program based on constructivist learning theory, specifically the incorporation of cooperative learning, guided-inquiry, and long-term group investigations (Brooks and Brooks 1993; NRC 2000). I was proudly employing the constructivist process in an effort to produce a constructivist laboratory program. Naively, I thought that by engaging the teaching assistants (TAs) in the reform process, their teaching philosophies and strategies would naturally change to fit the new paradigm. With confidence that the instructional model employed to achieve our goals (BSCS 1993) would promote greater student learning than the former one consisting solely of verification laboratories with no opportunities for group interactions and projects, I used a variety of methods to determine the extent to which the reformed curriculum changes actually occurred. While analyzing data however, it became painfully evident that some TAs may need training in the most basic of skills, those of a personal nature, before the rewards of curriculum reform could be fully realized. In this study, one TA did not demonstrate empathy toward his students or concern for their academic success. Even though

he espoused constructivist beliefs, his actions spoke otherwise. I observed a detached and critical overseer during most of his laboratory sessions. He would not assist students who needed help and belittled those who requested assistance. Several students asked to be moved to another section.

Researchers have acknowledged the powerful influence teachers have on the curriculum implementation process (Cronin-Jones 1991). Argyris and Schon (1974) call the disconnect between what people say and what they do “espoused theory vs. theory in use.” My study suggested that attributes such as empathy, courtesy, and respect should be part of the teacher’s value system before constructivist methodologies can be fully realized. In contemplating this thought, I asked myself if my perception of the lack of attention in science education to interpersonal-skill development might be the result of the nature of science itself. Might it be that because science strives to distance itself from subjectivity and matters of affect, science education suffers as well?

It has been my experience that high school and college educators typically leave issues of affect (Krathwohl, Bloom, and Masia 1956) to elementary teachers. Yet, in a large university study, Endo and Harpel (1982) examined the effects of student-faculty interactions on a variety of student outcomes including personal, intellectual, and academic achievement, and satisfaction with education using data from over 3,000

students. The frequency and quality of student-faculty interaction had positive impacts on these outcomes even while controlling for 14 student pre-enrollment characteristics. In 1994, Delucia examined the attitudes and behaviors that hinder or enhance student-faculty relationships during a student’s first year in college. It may be surprising for professors to learn that four of the six characteristics of an “ideal” professor are related to interpersonal skills: respects students, treats students fairly, friendly/caring, and is interesting. Hargreaves (1998) makes the case that good teaching is charged with positive emotion and that cognitive and emotional understanding cannot be separated from one another. Robert Fried (1995) contends that teaching is a passionate vocation, and McDermott states that “learning is in the relationships between people” (in Murphy 1999, p. 17). In *Mastering the Techniques of Teaching*, Lowman (1995) asserts that outstanding teaching involves evoking emotions associated with intellectual activity.

Professional schools provide interpersonal skill development (Farrell 1977; Kahn, Cohen, and Jason 1979; Novack et al. 1993; Rabinowitz, Feiner, and Ribak 1994; Tao 1993). For example, students at Harvard Law School participate in exercises using role play and videotaping to practice difficult situations (Bordone 2000). A number of studies have found that the most critical job skill a new employee needs to possess is good interpersonal skills (Appleby 2000; Johanson and

Fried 2002; Yancey et al. 2003). In his popular book *Emotional Intelligence* (1995), Goleman posits that this quality is essential for success.

The absence of explicit instruction in the education of science teachers should be addressed. Hargreaves (1998) states that “feminist writers point to how essential caring is to good quality teaching and learning, yet how ignored and marginalized it is in the official politics of educational reform and administration. An emphasis on teachers’ emotions in the context of how teachers work has been studied primarily in England and Australia—where educational reform is more transparent and funding is not situated in the government. In North America, the literature on teachers’ emotions has tended to be more celebratory or exhortatory” (p. 852). Indeed, in the UK, the BT Education Programme strives “to help everyone in the UK both understand and enjoy the benefits of improved interpersonal communication skills.” An explicit effort is made to support “dialogic teaching which puts authentic two-way communication at the core of the teacher’s professional repertoire” (The Better World Campaign). Research conducted in the Netherlands, England, and Australia can inform the U.S. science education community. *The Model for Interpersonal Teacher Behavior* provides a research tool that could be used to more fully explore this construct (Wubbels, Créton, and Hooymayers 1985; Wubbels and Brekelmans 2005). Rickards, Brok, and Fisher (2005) report data from the *Questionnaire on Teacher Interaction* to further develop science teacher typologies.

In conclusion, my study corroborates what many others have already recognized. Maybe it is time for American education to follow the lead of our professional schools and the educational systems of other countries

and teach interpersonal skills. Whatever happened, you may wonder, to my “problem” TA? Soon after this study ended, he changed his degree plan and became a high school biology teacher. Several trusted sources report that he became a good one!

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