Teaching at USMA

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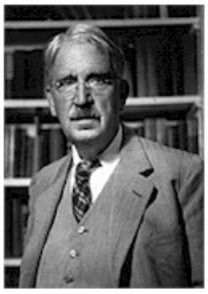
On Reflection & Learning

"The aim of education is to enable individuals to continue their education...the object and reward for learning is continued capacity for growth." - John Dewey

Democracy and Education (1935)



Recent interest at USMA in "reflection" as part of the cadet learning experience may suggest to some that this is a recent idea in education. However, nothing could be further from the truth. The "father" of American progressive education, John Dewey (at right) , considered reflection an essential part of the learning experience. And subsequent research in this area has affirmed most of his theories about reflective learning.

Research and learning theory shows that in order for learning to occur, individuals must "make meaning" from their experiences and/or learning situations. Dewey (1933) asserted that the core of the learning experience must be a project or experience from which the student can draw conclusions about the world.

The key to making experience educative, according to Dewey, is **reflective thinking.** Reflective thinking provides a bridge between what is observed (read) and experienced (done) on the one hand, and what is to be learned (concepts and ideas), on the other. It is the job of the educator to help walk students along that bridge, beginning with what they know at the outset, challenging them to extend their learning through analysis and synthesis, and assessing what they've learned.

As Dewey wrote in *How We Think* (1933), "Accordingly any subject from Greek to cooking, and from drawing to

(Continued on page 2)

Carnegie Foundation Perspectives

The Carnegie Foundation for the Advancement of Teaching has begun a monthly series that will explore educational issues through brief commentaries. The Carnegie President, Dr. Lee Shulman, is an outstanding educator; here is his introduction to the first of these Perspectives (printed on page 3):

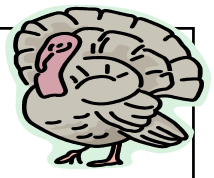
One of the obstacles to clear thinking about education is the tendency to get caught in formulaic pros and cons. People are for or against testing, in favor of vouchers or incensed by them, champions of small-group work by students or dismissive of it. Often what's needed is a different way to think about the issues facing educational decision makers, be it at the policy level or in the classroom.

Our first piece looks at the topic of accountability, a subject that tends to polarize thinking. Maybe that's because most of the recent discussion locates accountability outside the classroom. What different picture emerges, and what consequences follow, if we think about the teacher as the primary agent of his or her own accountability? Indeed, what if we think of external accountability as only a supplement to the primary function of professional responsibility?

Lee S. Shulman
President,
The Carnegie Foundation for
the Advancement of Teaching

(*Please see page 3 for Dr. Shulman's essay)*

Also in this Issue:



Reflection & Learning

(Continued from page 1)

mathematics is intellectual, if intellectual at all, not in its structure, but in its function--in its power to start and direct significant inquiry and reflection."

For Dewey, reflective thinking provides the means to

- move the learner from experience to a deeper understanding of its relationships with and connections to other experiences and ideas;
- make continuity of learning possible
- insure progress of individuals and, ultimately, the society;
- achieve essentially moral ends.

Reflection is a rigorous way of thinking, neither solipsistic nor self-indulgent. Dewey defined reflective thought as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends."

It occurs in five phases:

- An experience
- Identifying questions that arise from the interpretation of that experience
- Generating possible answers for questions
- Developing the explanations into full-blown hypotheses
- Experimenting or testing selected hypotheses.

What is critical to the experience (as a source for reflective thinking) is that it causes disequilibrium, and that sense of uncertainty or confusion is what impels the process of reflection. Fifty years after Dewey, Schön wrote of *The Reflective Practitioner* (1983) and explained the process in this way:

> The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation.

Clearly, reflective thinking is not amenable to an "approved solution." It promotes growth in the individual because it requires attitudes of curiosity, open-mindedness, self-awareness, patience, as well as the ability to take risks. Because it is so challenging, undergraduates benefit most from guidance through this process in community. That is, the development of reflective thinking requires specific classroom instruction to guide the learners.

Reflective thinking, as described by Dewey and others, suggests some specific instructional practices.

The core experience should be identified *by* the student, not *for* the student.

Since disequilibrium is the basis for inquiry, the student should not be told to reflect on a specific event, but should be asked to consider the event in light of feelings. That is, not "Think about CBT," but "Think about your varied experiences during CBT, and identify a time when you felt especially confused or uncertain about your situation. List any times like that."

Reflection should be considered as a process, and the student should be guided through that process.

Little is gained by assigning students to "Write a reflective paper about your CFT experience," when most undergraduates have not developed reflective thinking habits. Such an assignment would be more inclined to develop students' reflective thinking if it were broken into some or all of the phases of the process, with the students having the opportunity to develop their thinking through guided class discussions.

For example, the literature suggested that reflective thinking arises in situations where individuals experience a disjunction that prevents them from making meaning of the situation. Thus, it would be better to have the students individually identify specific times of disequilibrium during CFT. Then they might be asked to identify questions about those experiences (e.g., why they felt uncertain, confused, or uncomfortable). They can then generate possible answers for those questions as a group (class). Having done that, the class could engage in developing hypotheses and testing those hypotheses in discussion.

Beware of assuming that any specific practice or assignment can inculcate the process.

Throughout higher education, there's a practice of assigning journals as a way to promote reflective thinking, with little assessment of the effectiveness of this practice. In one study, students viewed journaling at best as very time consuming and at worst as a power tool used by lecturers for oppression and control. It's clear from the literature that in order for reflective thinking to take place, the student must have ownership of the process.

Perhaps the greatest enemy of reflective thinking is the fact that it is becoming anachronistic in contemporary society. Our culture is saturated with "reactive thinking" and reflective thinking is becoming more and more rare.

In Clifford Stoll's *Silicon Snake Oil: Second Thoughts on the Information Highway* (1995), he summarizes well the difference between "reactive" and "reflective" thinking:

(Continued on page 4)

. No Drive-by Teachers

By Lee S. Shulman

(reprinted with permission)

It's hard to open the paper or turn on the radio these days without finding yet another call for educational accountability. It's a reasonable thing to seek. The public needs to know that schools and colleges are delivering on their promises to students and to society. The problem is that the typical mechanisms for ensuring quality (such as external tests or other measures of some sort) often miss much of what actually goes on in classrooms.

A different way of looking at accountability is through the lens of the classroom, where, after all, the proverbial rubber of teaching and learning meets the educational road. Do we need tests and state "report cards" to take the measure of education's effectiveness as an enterprise? Maybe. Do we need teachers who see student learning and its improvement as their professional, ethical responsibility? Absolutely.

What is entailed in this responsibility? An analogy is helpful here. Consider the story we read in the news at least once a year. In one version, a passenger on an airplane experiences severe chest pain, and the cabin attendant asks if there is a physician on board. A physician comes forward and attempts to assist the patient, but after several interventions the patient dies. Subsequently, the family of the deceased sues both the airline and the physician, the latter for malpractice. Had the physician remained in her seat and withheld her professional service, she would have been held harmless, no questions asked.

In another version of the story, an auto accident leaves several people by the roadside badly injured. A physician drives by and decides not to stop and render medical assistance for fear that he will be held responsible for any care he delivers. Perhaps he had just read a news story about the first physician. He is later criticized for inaction, for an unwillingness to act professionally. Once a person or a community takes on the mantle of a profession, every act is potentially permeated with ethical questions.

My point is that excellent teaching, like excellent medical care, is not simply a matter of knowing the latest techniques and technologies. Excellence also entails an ethical and moral commitment--what I might call the "pedagogical imperative." Teachers with this kind of integrity feel an obligation to not just drive by. They stop and help. They inquire into the consequences of their work with students. This is an obligation that devolves on individual faculty members, on programs, on institutions, and even on disciplinary communities. A professional actively takes responsibility; she does not wait to be held accountable.

Consider the case of one of last year's U.S. Professors of the Year (a program co-sponsored by Carnegie and the Council for Advancement and Support of Education). Dennis Jacobs is Professor of Chemistry at the University of Notre Dame. Several years ago, teaching the introductory course in his department, he found himself face to face (often during office hours) with students who were failing his course or dropping out. This was disturbing for a couple of reasons. For one, these students were clearly bright and hardworking enough to succeed--but they weren't succeeding. Second, it was disturbing because failure for many of them meant abandoning long-held dreams and career aspirations.

Now, in some chemistry departments, the student failure rate in an introductory course is a badge of honor. But Jacobs was having none of this. Feeling an ethical responsibility for the success of his students, he designed an alternative approach to the course, employing small-group study circles and an emphasis on conceptual thinking. And then--this is an essential part of the story--he set about to document the effectiveness of this new approach. My colleagues and I at The Carnegie Foundation for the Advancement of Teaching refer to this commitment as "the scholarship of teaching and learning."

Leaving aside many of the details, Jacobs's approach not only allowed more students to succeed in meeting the chemistry department's high standards (far more students passed the course), it also modeled a kind of professionalism that should be at the heart of our ideas about educational accountability. Jacobs didn't just "drive by" when he saw what was happening to his students. He stopped what he was doing and gave assistance. He took responsibility for the quality of his students' learning through his own innovations and highly demanding assignments and tests.

Teachers like Dennis represent a kind of teaching excellence that is, admittedly, beyond what we find in lots of classrooms where teachers are content to teach well and leave it at that. It's tempting to say it goes "beyond the call of duty," but in fact my point is just the opposite. Teachers must accept the ethical as well as the intellectual and pedagogical challenges of their work. They must refuse to be drive-by educators. They must insist on stopping at the scene to see what more they can do. And just as is the case on airliners and freeways, many of the needed resources may be lacking. Nevertheless, they must seize responsibility.

There is no more powerful form of accountability.

Carnegie Perspectives is a series of commentaries that explore different ways to think about educational issues. These pieces are presented with the hope that they contribute to the conversation.

The Foundation invites your response at CarnegiePresident@carnegiefoundation.org

Reflection & Learning

(Continued from page 2)

> One way of thinking is simply to react to what's happening. It's how our minds work in traffic: that car's too close, I'd better slow down. A ball rolls into the street and I skid to a halt. I'm part of the action. This kind of reactive thought is trained by experience. Pilots are great at it, as are pinball wizards and Nintendo addicts. It's what makes computer games fun; computers are great at teaching this kind of thinking.
>
> But there's another kind of thinking, call it "headscratching" or "reflection" or "cogitation." It's where we get new ideas, create hypotheses, figure out solutions. This is hard and slower -- we don't get the zowie feedback that Nintendo provides. Computers don't help us much with this kind of thinking -- at their best, they can give us a playing field for thought, but they lack insight. Reading helps, as does writing. Analytical criticism helps. Teachers help a lot.

Stoll's final comment about the importance of teachers in fostering this process of reflective thinking highlights the point that students will not "automatically" engage in reflective thought. It is not the dominant mode in our society, and it's certainly not a dominant mode in a military academy. If we want cadets to engage in reflective thinking, we must foster it in the way we design—and implement—our courses.

References

Dewey, J. (1933). *How We Think. A restatement of the relation of reflective thinking to the educative process* (Revised edn.), Boston: D. C. Heath.

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Join us for the final "Brown Bag" of the semester.

Two opportunities:

Thursday 4 December or Friday, 5 December (both sessions at noon in Thayer 120)

"Teaching Case Studies: Some Solutions to Perennial Problems"

As the semester draws to a close, all teachers benefit from reflection on "what happened" and thinking about things that can be improved. Are soliciting "cases" for discussion from faculty members, cases that represent typical teaching challenges, and in these sessions we'll discuss possible ways to meet those challenges more effectively. Your invited to submit "cases" for discussion. Simply e-mail Anita Gandolfo a description of the problem you'd like to have discussed NLT Monday, 1 December.