

Why Learn?

What We May *Really* Be Teaching Students

Are we teaching our students how to grub for grades or how to learn in deep and lasting ways? The author offers a disturbing glimpse at a superficial approach to learning our institutions may be fostering. He also offers a reflective assessment of a deep approach waiting to be nurtured.

BY JOHN TAGG

YOU ARE A COLLEGE EDUCATOR and, imagine for a moment, a member of an institutional committee—let’s say, the curriculum committee. As you take your seat for today’s committee meeting, you feel unsettled. On your way to the meeting you’d had an odd experience, a freak coincidence that has set you to thinking some rather disturbing thoughts. This is how it happened.

You were walking across the quad on the way to the meeting when a student approached. You recognized her, in a vague sort of way, and had the feeling that she must have been in one of your classes not long ago, but you couldn’t quite place her. As you were rifling through your memory banks for a name,

she approached you with a smile: “Hi, Dr. Jones, you probably don’t remember me. I’m Jill Jackson; I was in your class a year ago, but I just crashed and burned at the end. I had some trouble and couldn’t keep up, so I got an F. But I want you to know that that book we were discussing, and the questions you raised about it, really got me to thinking. I finished reading it after the semester was over. I even made a couple of my friends read it so I’d have somebody to talk about it with! I want to follow up on the questions it raised. I’ve decided to change my major and I’m back at school this term. For the first time I really think I know what I’m doing here, and I have you to thank. So have a nice day. Bye-bye.”

Editor’s note: This is the first in a two-part series on the quality of student learning.

Your mouth a bit agape, you managed something like, “OK, sure, well, good luck to you,” as she walked away. Somewhat flushed, you continued across the quad, encountering twenty yards later another familiar face. This one you did recognize and you waved as he approached. “Hi, Dr. Jones,” he said. “Remember me? Jack Brown. I had your class last fall, got an A. Boy, I really needed that A, and I studied really hard. Thanks for a great class. Ha! I’m glad I don’t have to take your final today, because I don’t think I’d get a single answer right. But I enjoyed the class. Well, take it easy.”

Again, somewhat bemused, you wound your way across the quad. The question arose in your mind: Which of the two students would you consider more successful? Which one gives you more satisfaction, confirms that you have achieved what you wanted to achieve as a teacher? Jill or Jack?

The success story here, you quickly decide, is Jill. Why? The learning experience Jill had in your class continued after the class was over, changed her understanding, affected her decisions, her ideas, and her behavior, and continued to do so a year later. It became a part of her and she a part of it, so she was different for it. It’s not just that she changed her major. Had she become confirmed in her original choice of major, come to understand it better and embrace it more fully, you would have been equally satisfied. Jill carried the learning away with her and made it her own. Jack, from what little evidence you have, left it behind.

But what about the grade? Here too the contrast is stark. One student excelled and one flunked. Yet a year later the grade has ceased to be valid evidence of much of anything. It is overwhelmed by the evidence of the students’ knowledge, behavior, and beliefs as they have developed subsequently.

Your preference for Jill over Jack, you realize, suggests something a bit unnerving about the way most of us in higher education are doing business these days. As you made your way across the quad after your two chance encounters you had reflected on the paradox that, from the point of view of the institution where you work, Jack is a better student than Jill. The coincidence of these encounters coming so close together had raised to your consciousness a concern that has dogged you, in less explicit form, for a long time. Your sinking feeling had reached the pit of your stomach as you reached the door of the Emanuel Schmedlap Humanities Complex. You suspected that if you were to meaningfully assess the results of that class for these two students today, a year later, your evaluation would be entirely different, perhaps the opposite of what it had been at the end of the term. And it was not lost on you that the implications of this fact go far beyond Jill and

Jack. You couldn’t help but think about some research you had recently read on student motivation and retention of learning from one term to the next. Jack, you thought, spoke for many, many more students than Jill. But of course there was nothing you could do about that. It was completely out of your control. So you had done your best to set aside these disturbing thoughts as you approached the room where the curriculum committee was about to meet. On the agenda were new and revised course outlines and changes in prerequisites for math and science. You aren’t sure you want to talk about that today.

WHAT DO WE WANT?

WHAT, AFTER ALL, are colleges for? What are they supposed to do? Look at this great enterprise of undergraduate higher education—What is its function? What are the more than thirteen million students doing in it? Or look at the institution in which you are involved—what are its goals? What would define its success?

An unbiased observer, looking at any organization, would look to its core processes, what its members do, what they get paid for, what it documents and records, and what criteria it uses for changing the way it does things. Kellogg and Post aim to make breakfast cereal, Ford and General Motors aim to make cars, hospitals aim to make people healthier. Colleges, judged by the same standards and by the evidence of their own documentation, aim to have people take classes. It is as if Kellogg saw its function as grinding up great amounts of corn, or the RAND Corporation sought to fill as many pages as possible with reports. Kellogg knows what the corn is for. RAND knows what the reports are for. What are the classes for? There are a lot of potentially good answers to that question, but most of our undergraduate colleges do not preserve any information about those answers. What they do preserve—the almost exclusive documentation of their work that survives the class itself—is grades, transcripts. Kellogg makes cereal; colleges make transcripts.

But that is not, I venture to guess, the reason that those of us who work at colleges have chosen to work there. We did not sign on to be cogs in transcript-generating factories. Indeed, we view it as a sure sign of deficiency in our students when they seem to be focused exclusively on grades, to view the grade as valuable for its own sake rather than for what it should stand for. We view students like Jack, who thinks his A was the whole point of the class, with ill-concealed disdain. We see him as a kind of academic Philistine, confounding the spirit of the law with, if you’ll pardon the expres-

sion, the letter. Confusing the means with the end. We think of our students as shortsighted and shallow when they place a primary value on the only thing our institutions preserve and report about them: their transcripts.

HOW STUDENTS WORK

WHAT, THEN, should our students value? What do we want them to seek, to aim for? This is not a hard question to answer. We saw that answer, in living color, in Jill. Why is her example so satisfying? Because she learned something, she kept what she learned, and she used it.

The difference between Jack's and Jill's grades is a *quantitative* difference. He got more points on a test than she did. The purpose of multiple-choice tests is to convert knowledge into numbers, to quantify. This process is inherently reductionistic; it reduces the full-color relief map of the student's understanding into a two-dimensional, black-and-white cartoon. And the assignment of a grade on the basis of multiple-choice tests further reduces the delineations, leaving as the surviving report a primitive blot.

If the difference between Jack's and Jill's grades is quantitative, however, the difference between their understandings is *qualitative*. Even if our impressions of Jill and Jack are correct, we still have no basis for deciding whether Jill learned more than Jack learned. We do, however, have some evidence that she learned *better* than he did. And this, I think, goes right to the heart of what we value, of what we seek, in the educational enterprise. It explains our disappointments and frustrations, our complaints and our bitterness, our satisfactions and our successes. What we really want is quality, not just quantity. This is not to say we should never count or measure the results; but if we do so, we want to be counting something of value. So how can we define quality?

Eric Mazur, a professor of physics at Harvard University, raised this very question after several years as a "successful" teacher. He had begun to see evidence that his students in introductory physics were not really getting it, even though they were doing well enough on

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his examinations. He set out to investigate. Alongside the challenging and highly quantitative multiple-choice tests he gave in the course, he administered a set of questions developed by physicist David Hestenes at the University of Arizona that sought to determine through "simple" and commonplace examples students' basic conceptions of Newtonian physics. The results were striking. One student asked, "Professor Mazur, how should I answer these questions? According to what you taught us, or by the way I *think* about these things?" (Which role shall I play for this test: Jack or Jill?) And when Mazur paired "simple" qualitative questions with "difficult" quantitative ones on the same test, 40 percent of the students did better on the quantitative problems than they did on the conceptual ones. What was going on here? "Many students," Mazur concluded, "concentrate on learning 'recipes,' or 'problem solving strategies' as they are called in textbooks, without considering the underlying concepts." Many students, in other words, study as Jack did. The reason they cannot recall the correct answers a year—or a month—later is that they never really understood them in the first place.

TRUE QUALITY LEARNING

IN THE MID-1970s, two Swedish scholars, Ference Marton and Roger Säljö of the University of Göteborg, set out to explore essentially this problem; they sought to differentiate qualitatively rather than quantitatively between effective and ineffective learners. They embarked from the premise that "for the understanding of 'what it takes to learn,' a description of *what* the students learn is preferable to the description of *how much* they learn." They gave students a learning task: read an essay and summarize it, solve a problem. Then they interviewed the students about what they had done. On the basis of these interviews and student performances, Marton and Säljö concluded that different students approached the tasks differently from the outset. For example, when asked to summarize an essay, some students reported a series of claims made in the essay in the same sequence in which they had encountered them. Others explained the main point or thesis of the essay and then related subordinate claims hierarchically to the thesis. These two groups of students generally described their approach to the task differently. On the one hand, those who simply reported in order the claims made in the essay made comments like these:

"Well, I just concentrated on trying to remember as much as possible."

One student excelled and one flunked. Yet a year later the grade has ceased to be valid evidence of much of anything. It is overwhelmed by the evidence of the students' knowledge, behavior, and beliefs as they have developed subsequently.

"I remembered . . . but, I'd sort of memo-
rized everything I'd read."

". . . no, not everything, but more or less."
(p. 9)

The students who, on the other hand, found the central point of the article and used it to organize their summaries made comments like these:

". . . I tried to look for . . . you know, the principal ideas. . ."

". . . and what you think about then, well it's, you know, what was the point of the article, you know."

"I thought about how he had built up the whole thing." (p. 9)

Marton and Säljö characterized the first group of students, those who simply tried to remember points in order, as doing *surface-level processing*. Those who developed a concept of the whole essay organized around its central theme were engaged in *deep-level processing*. Students who take a surface approach to a learning task are focusing on the *signs*—the words of the essay, the numbers in the physics problem. Those who take a deep approach are focusing on the *meaning*—what the signs signify, the ideas the author is presenting, the concepts the numbers represent. Marton and Shirley Booth, in their 1997 book *Learning and Awareness*, put it this way: "Deep approaches were related to grasping the author's message, and surface approaches were related to miscomprehending or missing the message altogether" (p. 22). Subsequent studies have applied the distinction to learning at all levels of academic work, in fields as disparate as history, physics, mathematics, art, and computer programming.

When I first read Marton and Säljö's research, I experienced an immediate shock of recognition. These were my students they were describing, in some cases nearly quoting, such as the composite students we met at the beginning. Jill, in our example, was taking a deep approach to learning; in her first reading of the book she engaged with the ideas, the underlying meaning. That was what motivated her. Jack, on the other hand, took a surface approach. We see in Jack what we do not like to see in our students: he studied for tests. We see in Jill the kind of student we want to have because we see in her the characteristics of a deep approach to learning: she studied for life. Why do students take these radically different approaches? And is it really the case that the fundamental choices that students make, which determine the quality of their learning, are simply out of our control?

MAYBE I CAN'T CHANGE

WHY DO SOME learners approach a subject or an idea in a way that makes it meaningful while others approach it in a way that makes it meaningless? In part it is because of the goals they adopt in approaching the learning task.

Broadly speaking, learners approach a task with one of two kinds of goals: *performance goals* or *learning goals*. Carol Dweck, a psychologist at Columbia University, in her 2000 book *Self-Theories: Their Role in Motivation, Personality, and Development*, puts it this way: performance goals are "about winning positive judgments of your competence and avoiding negative ones" (p. 15). With learning goals, on the other hand, your aim is to "increas[e] your competence." The student who sets a performance goal wants the A. The student who sets the learning goal wants the understanding—or more.

Marton and Booth describe a detailed study (conducted by Marton and several other colleagues) of a

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cohort of students from the Open University in the United Kingdom in the 1980s. They asked these students what their conceptions of learning were and found that the students' self-reports fell into six categories (the quotations are from interviews of the students):

Learning as increasing one's knowledge: "Accumulation of knowledge." "Filling my head with facts."

Learning as memorizing and reproducing: "Learning it up for exams and reproducing it." "Drumming it into the brain and reeling it off."

Learning as applying: "Take in information, see how it can be used." "Turn it around and make use of it in other ways."

Learning as understanding: "Looking again at things that you know about but with a slightly different perspective—or seeing other people's views on things." "To have a process of thought that sort of 'sets in motion' when you look at something . . . tackle looking at something in a far more logical way."

Learning as seeing something in a different way: "Opening your mind a little bit more so you see things in different ways." "Being able to look at things, from all sides, and see that what is right for one person is not right for another person."

Learning as changing as a person: "Expanding yourself . . . you tend to think that life just took hold of you and did what it wanted with you. . . . You should take hold of life and make it go your way." "It's something personal and it's something continuous. Once it starts it carries on and it might lead to other things. . . . You should be doing it not for the exam but for

the person before and for the person afterwards. . . ." [pp. 36–38]

Marton notes that students in the first three categories—learning as increasing one's knowledge, learning as memorizing and reproducing, and learning as applying—view learning mainly as reproducing, as the accurate reproduction of signs. Those in the last three categories—learning as understanding, learning as seeing something in a different way, and learning as changing as a person—see learning as mainly concerned with seeking meaning. But we can also see that the first three levels are chiefly concerned with producing a satisfying performance while the last three levels are concerned with development and personal growth. Those who set performance goals tend to take a surface approach to learning; those who set learning goals tend to take a deep approach.

Why do students then pursue performance goals rather than learning goals? The first and most direct answer to that question is that it is because of what they believe about themselves. Learning goals are goals for personal change. If the learning is to stay with you it must become a part of you. If it doesn't, you leave it behind. The point was made forcefully by one of the interviewees in Marton's study who viewed learning as memorizing: "When you have achieved whatever it was learned for, then that's it, it can go away, it's disposable, you can get rid of it" (p. 36). My own students, in much the same spirit, often describe their goals for a course as to "get it out of the way." Learning environments, from the perspective of performance goals, are obstructions to be moved past and then discarded. Do you recognize Jack?

Students who have little faith in their capacity for cognitive change and development will tend not to set learning goals. Carol Dweck has explored motivation and goal setting in students of varying ages and ability sets. She has found that we adopt implicit theories about our own abilities in a given domain, and that these theories powerfully influence the kind of goals we set. *Entity theorists* tend to believe that their own abilities in

a given domain are a fixed entity, not subject to change. For the entity theorist, the basic fact about his ability in athletics or math or pinball is that “you have it or you don’t,” and in either case much time spent on it would be wasted. Entity theorists, Dweck points out, aim only at “easy, low-effort successes, and outperforming other students. Effort, difficulty, setbacks, or higher-performing peers call their intelligence into question—even for those who have high confidence in their intelligence” (p. 3).

Incremental theorists, unlike entity theorists, believe that their abilities are not fixed but malleable, subject to development or decline. While entity theorists tend to see effort as a sign of lack of ability, incremental theorists tend to see effort as the key to developing ability. For the entity theorist, trying hard is a sign of weakness; for the incremental theorist, it is the only route to success. Dweck found a clear and significant relation between the students’ theories of intelligence and their goal choices: the more students held an entity theory of intelligence, the more likely they were to choose a performance goal, whereas the more they held an incremental theory, the more likely they were to choose the learning goal.

Entity theory shows up in our students in a variety of ways. I ask my students on the first day of class to describe their goals for the class. The contrast between performance and learning goals is stark and obvious. There are always a few who, like Jill, seem genuinely to be seeking to develop their thinking and their abilities to meet new challenges. But the vast majority, like Jack, frame their goals in terms of a grade or a job. Many students do not seriously entertain the idea of substantial development or change in an academic setting. The student entity theorist, whether he considers himself talented or terrible, is setting himself up for failure as a learner. Because learning goals are goals for personal change, they are beyond the reach of the student as entity theorist, for his talents are frozen and immobile. Thus even very talented entity theorists are ill-suited to meet the challenges of serious learning. As Dweck says, “Entering a challenging scholastic setting with a belief in fixed intelligence seems to set students up for self-doubt, anxiety, and drops in achievement. The entity

theory puts a premium on immediate demonstrations of intellectual ability rather than on mastery over time” (p. 32). And because almost all genuine mastery is achieved over time, this attitude seriously disables students’ capacity for quality learning.

What the entity theorist can do is try to ace the test through scholastic legerdemain, to cram a certain amount of disposable knowledge into short-term memory long enough to get the grade on the transcript. Then, as Marton’s interviewee so unforgettably put it, “it can go away, it’s disposable, you can get rid of it.”

THE BUTTERFLY POSSIBILITY

IT MAKES VERY LITTLE sense to blame students like Jack for their choices. It is easy for us to see what these students are missing, what they are denying themselves, how narrow and short-term a world they are selecting for themselves. But it doesn’t appear that way to them. As Robert Kegan of the Harvard Graduate School of Education puts it, “If a caterpillar doesn’t know its future has wings, it hardly experiences itself as land-bound” (p. 41).

Kegan argues in his book *In Over Our Heads: The Mental Demands of Modern Life* that as we grow older and seek to meet the challenges of adulthood, we need to develop new ways of thinking about ourselves and about our relationships to others and to the world. This “developmental transformation” is “the process by which the whole (‘how I am’) becomes gradually a part (‘how I was’) of a new whole (‘how I am now’)” (p. 43). We can see Marton’s categories of student thinking about learning as reflecting stages of development in students’ realization of themselves as learners. Marcia Baxter Magolda of Miami University of Ohio has followed students in longitudinal studies through the four years of college and beyond, tracing the evolution of their attitudes and expectations. She has found that students develop a more complex and flexible epistemology as their sense of the relationship between themselves and the world evolves to meet new challenges. Jim, one of the students she tracked, expressed the most primitive way of knowing, which she identifies as “absolute knowing”: “The factual information is cut and dried. It

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is either right or wrong. If you know the information, you can do well. It is easy because you just read or listen to a lecture about the ideas. Then you present it back to the teacher” (p. 43). Jim echoes Marton’s respondents who reported that learning consists of “Filling my head with facts” and “Learning it up for exams and reproducing it.” Students who take a surface approach to learning are effectively locked in absolute knowing; they can grow only in the quantity of facts they can accumulate. Students working in this framework of thought about their learning are the most terrestrial of cognitive caterpillars, bound to branch or earth by myriad stubby legs, never glancing at the sky set so definitively above and beyond them.

These students find themselves, in Kegan’s telling phrase, “in over their heads.” Set college aside for a moment: to meet the demands of work, of relationships, of citizenship, people need not simply to acquire more bits of information, but to constitute new frameworks for understanding. They need not just acquisition but also transformation, not just more facts but also metamorphosis. The young person can rise from the world of the “cut and dried” to the world of—well, of the world. This developmental process, moving through several stages, aims at what Kegan calls *self-authorship*. It is precisely self-authorship that important work calls for, in the personal, the public, and the professional realms. It calls for people who, in Kegan’s words, can “be self-initiating, self-correcting, and self-evaluating rather than depend on others to frame the problems, initiate the adjustments, or determine whether things are going acceptably well. . .” (p. 168). To move toward self-authorship is to embrace substantive and transformative learning goals at a deep level.

Marton characterized the highest category of thinking about learning among the students he interviewed as “learning as changing as a person.” But *changing* perhaps fails to capture the trajectory of these students quite fully. These students are certainly incremental theorists; they embrace the project of personal change as a real possibility—but change not as random variation but as development into a new thing. These caterpillars know they can’t fly, but they envision a future in which they will. “You should be doing it not

for the exam but for the person before and for the person afterwards. . . .” “You tend to think that life just took hold of you and did what it wanted with you. . . . You should take hold of life and make it go your way.” Jill too has grasped the possibility of remaking her way of knowing; she has not reached but is moving toward self-authorship. They are still caterpillars, perhaps, but their eyes are on the sky.

SOCCKER IS TO MATH . . .

KEGAN AND BAXTER MAGOLDA both confirm that most college students do not move very far toward self-authorship while in college. The most significant developmental movement takes place after students have left college. Why is this? This is the second and deeper answer to the question of why students set performance goals rather than learning goals. What sets students on a trajectory toward deeper and more complex understanding of their own possibilities as learners? Or what holds them on the treadmill of memorization and point-hoarding? Remember that self-theories are not global; they change with different domains and in different contexts. Students’ self-theories are practical adaptations to the contexts in which they find themselves.

For example, students tend to adopt an incremental theory in most cocurricular activities in which they choose to participate. Students who go out for sports or the band or choir or who audition for theatrical productions usually work hard and practice a lot—a sure sign that they are adopting an incremental theory about the activity. Why practice a lot unless you think you can get better? Indeed, some students who adopt an incremental theory in response to some tasks in a given domain appear to adopt an entity theory in response to other tasks or in other situations. Students who adopt an incremental theory in cocurricular activities sometimes adopt an entity theory in the classroom, *even in the same subject or domain of knowledge*. I have seen it myself—cases where the same student, exercising the same skill, sets learning goals in self-selected activities but performance goals in the classroom. Likewise, many students develop a much more

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