Routledge
Taylor & Francis Group

Change: The Magazine of Higher Learning

ISSN: 0009-1383 (Print) 1939-9146 (Online) Journal homepage: http://www.tandfonline.com/loi/vchn20

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Lee S. Shulman

To cite this article: Lee S. Shulman (2002) Making Differences: A Table of Learning , Change: The Magazine of Higher Learning, 34:6, 36-44, DOI: 10.1080/00091380209605567

To link to this article: http://dx.doi.org/10.1080/00091380209605567

At the beginning of God's creating of the heavens and the earth, when the earth was wild and waste, darkness over the face of Ocean, rushing spirit of God hovering over the face of the waters—God said: Let there be light! And there was light. God saw the light: that it was good. God separated the light from the darkness. God called the light: Day! And the darkness he called: Night! There was setting, there was dawning, one day.

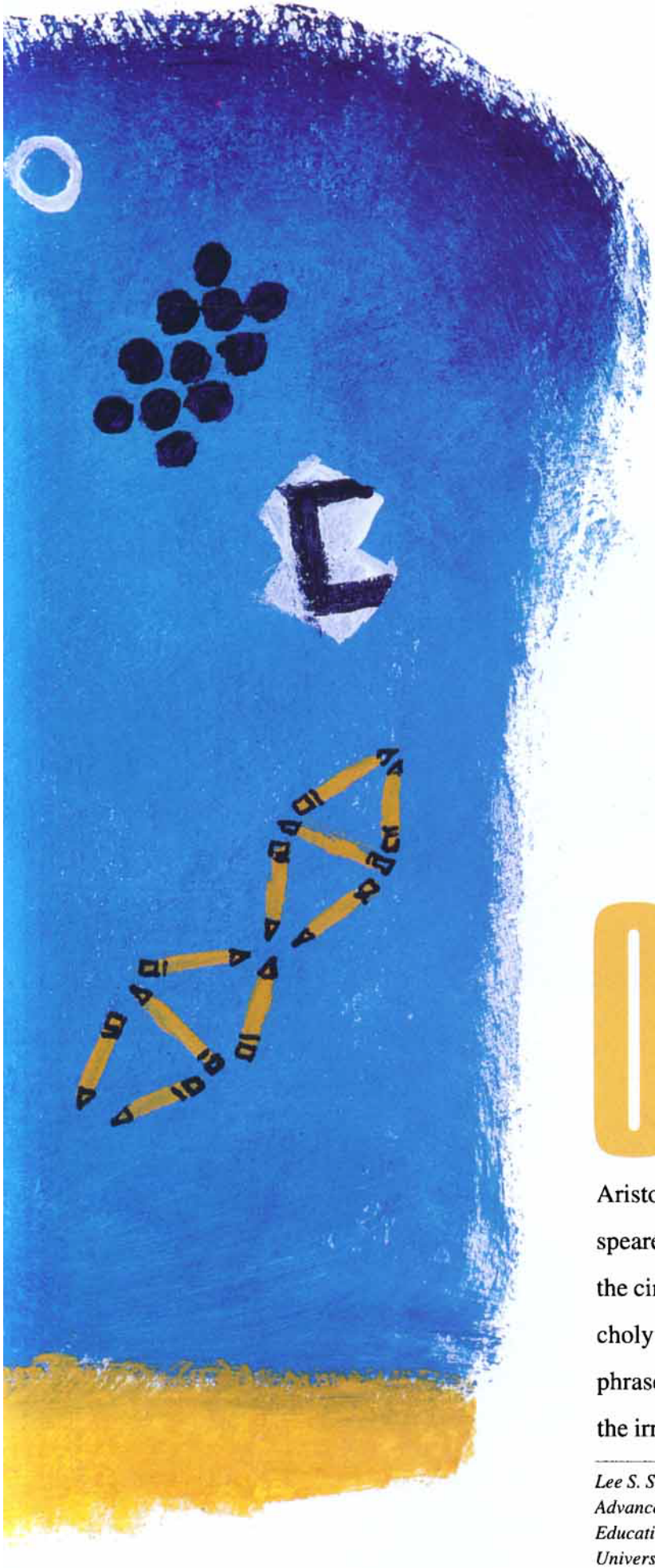
—Genesis I, Verses 1-5; Everett Fox (1995 translation) *The Five Books of Moses,* Schocken Books, Inc.

Some things exist by nature, some from other causes. Animals and their bodily organs, plants, and the physical elements—earth, fire, air and water—such things as these we say exist 'by nature.'

—Aristotle, *Physics*, Book 2

All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances,
And one man in his time plays many parts,
His acts being seven ages….
That ends this strange eventful history,
Is second childishness and mere oblivion,
Sans teeth, sans eyes, sans taste, sans everything.

—"As You Like It," 2. 7. 139-167



Making Differences

A Table of Learning

BY LEE S. SHULMAN

One of the central ways we make sense of experience is by making differences. The world presents itself without inherent order, and our impulse is to place things in piles, count them, and name them. In the act of creation, day is divided from night. Aristotle classifies just about everything. Shakespeare gives us the seven ages of man, Dante maps the circles of hell, Burton anatomizes melancholy.... In ways that Kant never intended by the phrase, we are driven by a "categorical imperative," the irresistible impulse to place things in categories.

Lee S. Shulman is president of The Carnegie Foundation for the Advancement of Teaching and Charles E. Ducommun Professor of Education and, by courtesy, professor of psychology at Stanford University.

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This is not an irrational impulse. Distinctions and taxonomies are tools for thought. We make distinctions for the same reasons we carve a turkey or write our books in chapters—to make the world more manageable. And it's only natural that we further order our distinctions and categories into systems, tables, and taxonomies.

The systems sometimes entail stages or hierarchies that imply a sequence of merit or maturity (for example, the biological phyla progressing from single cells to human beings). Sometimes there is no implied hierarchy (as in libraries, university catalogues, and the four basic food groups). We may propose systems that look like a call for balance and new priorities, as in Ernest Boyer's four scholarships.

Categories and distinctions also can call attention to ideas, principles, or values that hitherto have been ignored. In my own work on knowledge for teaching, for example, I once argued that it was insufficient merely to distinguish between content knowledge and pedagogical knowledge of teaching methods. I proposed a new category, *pedagogical content knowledge*, as a way of signaling that there was a missing component in our theories of teaching.

That concept, often called PCK, became a tool for thought, an analytic category, a mnemonic and even a call to action. As a new category, it was like a new piece of furniture in the living room. It changed the landscape and created both new opportunities and new barriers. In short, for all the postmodern criticisms and deconstruction of distinctions and taxonomies, they sometimes come in quite handy. Indeed, as educators, one of the ways we can make a difference is by making distinctions.

A New Table of Learning

There is no such thing as a "new" taxonomy; all the likely taxonomies have been invented, and in nearly infinite variety. Probably the single most famous list in the world of educational thought is the Taxonomy of Educational Objectives devised by my one-time teacher Benjamin Bloom. I can't begin to talk about a new taxonomy without acknowledging the invaluable contributions of Bloom and his colleagues—as well as other taxonomic pioneers including William Perry, Lawrence Kohlberg, Grant Wiggins, and many others who have attempted to create a system for classifying the kinds of learning we seek for our students. Here then, stark and unadorned, is what I will call Shulman's Table of Learning:

Engagement and Motivation
Knowledge and Understanding
Performance and Action
Reflection and Critique
Judgment and Design
Commitment and Identity

That's all there is. If you ask what comes after commitment and identity, I will suggest it is new engagements and motivations. Like the brave souls whose job it is to paint the Golden Gate Bridge, when you reach the end you return to the beginning. The table meets the mnemonic criterion of seven items plus or minus two, so it's a list you can probably remember without notes. It's also a list you can forget when forgetting, as I'll suggest later, is appropriate.

In a nutshell, the taxonomy makes the following assertion: Learning begins with student engagement, which in turn leads to knowledge and understanding. Once someone understands, he or she becomes capable of performance or action. Critical reflection on one's practice and understanding leads to higher-order thinking in the form of a capacity to exercise judgment in the face of uncertainty and to create designs in the presence of constraints and unpredictability. Ultimately, the exercise of judgment makes possible the development of commitment. In commitment, we become capable of professing our understandings and our values, our faith and our love, our skepticism and our doubts, internalizing those attributes and making them integral to our identities. These commitments, in turn, make new engagements possible—and even necessary.

The Roots of This Work

About five years ago, when Russ Edgerton was serving as education officer for The Pew Charitable Trusts, he produced a terrific white paper, which has propelled many of the most interesting initiatives in higher education today. One of Russ's arguments focused on something he called "pedagogies of engagement"—approaches that have within them the capacity to engage students actively with learning in new ways. He wasn't talking only about service learning, though service learning was an example; he was talking about an array of approaches, from problem-based and project-based learning to varieties of collaborative work and field-based instruction. Russ used the rubric "pedagogies of engagement" to describe them all.

For me, there was an intriguing ambiguity associated with Edgerton's phrase and the claims implicit in it. Is engagement a means to an end, a proxy, or an end in itself? Are pedagogies of engagement a way to involve the minds, the hearts, the hands and feet, the passions and interests of students who are otherwise inclined to learn passively? Is the hallmark of these pedagogies the fact that they grab the student's interest? Or is their purpose not only to grab but to hold that interest, not only to entice but to instruct?

Or—a third possibility—did Edgerton intend to claim that engagement is a worthwhile end in itself, and that often an educator's responsibility is to make it possible for students to engage in experiences they would never otherwise have had? After all, we attend a chamber music concert as an end in itself, not as a means to some other end. These questions in response to Edgerton's discussion of pedagogies were one source of my thinking about the relationship between engagement and other dimensions of learning.

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A second stimulus for the taxonomy was the study of professional education that The Carnegie Foundation for the Advancement of Teaching is now undertaking, looking concurrently at preparation for law, engineering, teaching, and the clergy. One emerging theme in this work is that learning to be a professional isn't a purely intellectual endeavor. To become a professional, one must learn not only to think in certain ways but also to perform particular skills, and to practice or act in ways consistent with the norms, values, and conventions of the profession. Thus, to learn to be a lawyer, one needs to *think* like a lawyer, *perform* like a lawyer, and *act* like a lawyer.

Acting is more than knowing something or performing well; it seems to involve the development of a set of values, commitments, or internalized dispositions. It reminds me of what theological educators talk about as *formation*—the development of an identity that integrates one's capacities and dispositions to create a more generalized orientation to practice. Moreover, professionals cannot, in principle, learn all that they will need while they remain in school. Professional education must have at its core the concept of ongoing individual and collective learning, because the experiences of engaging, understanding, and acting must become the basis for subsequent learning and development.

These and other reflections about Carnegie's work on professional education triggered a "categorical imperative," and I responded by trying to invent a more ordered system, a table of learning or a taxonomy of educational ends.

What Are the Uses of Taxonomies?

To answer this question, and to say something about the history and nature of taxonomies, I want to return to the work of Benjamin Bloom. What motivated Bloom and his colleagues to create taxonomies in the first place?

It was the late 1940s, and, partially in response to the needs of veterans returning from World War II eager to get a superb education, undergraduate liberal education was experiencing yet another renaissance (they occur rather regularly). "General education" was the mantra of the day, and it posed interesting problems for practitioners. One problem was that everyone agreed that general education should be about more than putting discrete items of knowledge into students' heads, that knowledge wasn't enough; the question was, "What more is there? Knowledge and *then what*?" Educators needed a language, a set of terms for making sense of the general education world.

About the same time, some campuses that were developing new general education programs made the very interesting decision to distinguish the roles of teacher, mentor, and instructor from those of evaluator, judge, and grader. The result was an arrangement such as I encountered as a student at the University of Chicago—the Examiner's Office, directed by Bloom, designed to develop assessments that would measure and evaluate how well students had learned what the general education program intended to teach.

The challenge was to ensure that what was assessed was compatible with what was taught. It made no sense at all to have instruction and assessment marching to different drummers (even though we now do that as a matter of public policy in K-12 and are in danger of doing so in postsecondary education). Educators needed a new language, a lexicon, to connect and align teaching and assessment. Bloom and his colleagues spent a number of years developing this common language, and because the concern for its existence was shared across institutions, dozens of institutions collaborated.

So what did this common language look like? Many educators across the world know the six categories of Bloom's Taxonomy of Educational Objectives by heart: knowledge, comprehension, application, analysis, synthesis, and evaluation. Complicating things further, Bloom recognized that the cognitive domain was only part of the picture, so, several years later, the Affective Domain Taxonomy was added by Krathwohl, Bloom, and Masia. It depicts how learners move from a willingness to receive an experience, to beginning to respond to it, to valuing what is taught, to organizing it within their larger set of values and attitudes, and ultimately to internalizing those values such that they no longer need an external stimulus to trigger the associated affective and emotional responses.

The Cognitive Taxonomy	The Affective Taxonomy
Knowledge	Receiving
Comprehension	Responding
Application	Valuing
Analysis	Organizing
Synthesis	Internalizing
Evaluation	

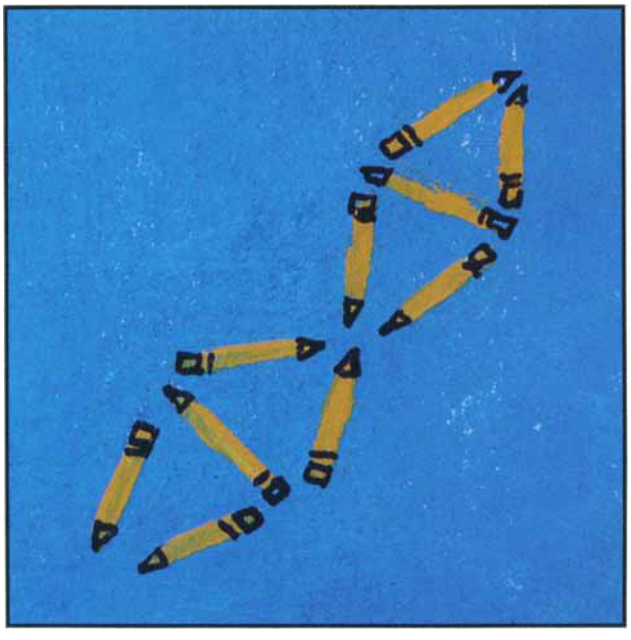
What can we learn from Bloom about the uses and perhaps abuses of taxonomies? One thing that happened is that the categories quickly became far more than rubrics for assessment. Taxonomies exist to classify and to clarify, but they also serve to guide and to goad. People rapidly began to use Bloom (and related schemes) as frameworks for designing courses and programs. They used the taxonomies to determine if they were putting too much emphasis on knowledge; if they were teaching for comprehension; if they were teaching for analysis or synthesis; if students at the end of a course were able to evaluate and make critical judgments about the relative value of alternative ways of making sense of the world.

Quickly, then, the taxonomies moved from being a scoring rubric and vehicle for communicating about test items, to being a heuristic for instructional design. (It's worth noting that although William Perry's model became as central to discussions of higher education and its goals as Bloom's has been

in elementary and secondary education, the two literatures have developed quite independently.)

Moreover, we see that these heuristics are not value-free; indeed, they rapidly become ideologies, a form of collective conscience. Disciples of Bloom soon switched from asking, "Do we have the right balance between higher- and lower-order thinking in the design of our course?" to asking, "Shouldn't we be teaching more higher-order thinking?" A moral obligation to teach synthesis (not to mention evaluation) was created, and the taxonomies evolved from an ostensibly dispassionate framework into ideologies that had real, normative implications (though not necessarily bad ones). This is how taxonomies often work: They become ideologies. A taxonomy's rapid progression from analytic description to normative system—literally becoming a pedagogical conscience—warrants caution.

Another thing that happens to taxonomies, and it happened to Bloom's, is that they come to be understood as making a theoretical claim about sequentiality and hierarchy, suggesting that the only legitimate way to learn something is in *this particular order*. The implication of sequence and hierarchy within taxonomies obscures their true value because taxonomies are not and should not be treated as theories. They are *certainly* not grand theories. At their best, they are what Robert Merton has called, coining a very useful concept, "theories of the middle range."



A theory of the middle range can be thought about in many ways: as an extended metaphor, a limited explanatory principle, or even a story. Thus, Bloom's cognitive taxonomy tells the story of education beginning with the acquisition by rote of facts that someone else has taught you and which you are only expected to reproduce or repeat. The story becomes more exciting as knowing matures into understanding and application, and then even more adventurous as ideas are subjected to analysis, as new ideas can be created and synthesized, and finally, at the highest level, as the learner becomes capable of judging and evaluating the truth or usefulness of the ideas themselves. That's the narrative version of Bloom's taxonomy.

Here then (I cannot resist) is a possible taxonomy (or is it a typology?) of the uses of taxonomies:

Uses of Taxonomies

Lexicon; working vocabulary; language
Classification (library, catalogue, Carnegie Classification)
Elements to be balanced (food groups; Boyer's scholarships)
Assessment and design framework; protocol for analysis
Middle-range theory
Master narrative
Mnemonic; checklist; heuristic
Ideology; conscience; moral code
Elements to be played with

A Table of Learning: Elaborating the Elements

Now let us return to the Table of Learning, which I introduced earlier as a taxonomy of liberal and professional learning. What do its six elements mean, and how are they related?

The first item on the list, *engagement*, is one of the most interesting and important aspects of learning. We rarely paid enough attention to it in the past, but higher education is now much more focused on "active learning" and on evidence that students are engaged in worthwhile educational experiences. Indeed, it's interesting that one of the instruments receiving the most attention in the last couple of years has been the National Survey of Student Engagement (NSSE)—another product of Russ Edgerton's work at Pew and an intended antidote to the reputational ranking systems that many of us find so infuriating.

The argument NSSE makes is that we want to know about student engagement because it serves as a proxy for learning, understanding, and postgraduation commitments that we cannot measure very well directly, or that we would have to wait 20 years to measure. As noted earlier, however, I would argue that engagement is not solely a proxy; it can also be an end in itself. Our institutions of higher education are settings where students can encounter a range of people and ideas and human experiences that they have never been exposed to before. Engagement in this sense is not just a proxy for learning but a fundamental purpose of education.

Understanding is the category we spend most of our time as educators worrying about, as well we should. It includes knowledge, and it includes the ability to restate in one's own words the ideas learned from others. In fact, one way of putting it is to say that understanding means knowing the difference between paraphrase and plagiary. It also means knowing when we can claim an understanding for ourselves, when we can claim an understanding of the work of those whose sources we acknowledge, and when we can say, "I didn't know this, but somebody else did and here it is." In contrast to knowledge and information, understanding connotes a form of ownership.

Next we come to *performance, practice,* or *action*. For me the difference between understanding and practice lies in the fact that acts of understanding are always based on what's in our heads. Even performances of understanding, such as writing an essay, are still about the ideas themselves. But as we move toward performance or practice we start to act in and on the world, to change things in it, and therefore a different set of consequences are associated with performance than with understanding.

We in the academy would love to believe that one can't practice or perform without first understanding. Alas, we all know that's not true (those of us who've raised children cer-

The directionality of the taxonomy is situational; it isn't always the same. Practice may be the crucible in which understanding is tested...; it's the pivot point, one might argue, around which most of education revolves.

tainly know it's not true, neither for the raiser nor the raisee). During my decade of work on medical diagnosis, I studied gifted internists to understand how they made diagnostic judgments. A good friend, the Australian surgeon Ken Cox, came to me one day and said, "Lee, you're doing pioneering work on internists, trying to learn how their diagnoses lead to courses of action, but there's a big difference between internists and surgeons."

"Internists," he said, "make a diagnosis in order to act. Surgeons act in order to make a diagnosis." That may be a frightening thought for anyone facing surgery, but if you're wheeled into the emergency room with severe abdominal pain, and the physician treating you says he needs to do three days of tests before he acts, your family may want to begin saying their farewells to you. There are times when action is absolutely necessary in order to figure out what's going on, rather than waiting to figure out what's going on in order to act. My point is that the directionality of the taxonomy is situational; it isn't always the same. Practice may be the crucible in which understanding is tested, or in which commitment is affirmed; it's the pivot point, one might argue, around which most of education revolves.

I've already commented on the relationship between *critical reflection* and action. But let me add that the connection between critical reflection and action is in some ways a paradoxical one because in order to act in the most effective ways, we sometimes must cease action. Eleanor Ochs, an anthropologist, studied a team of physicists working on a large-scale collaborative research project. It was, she found, when they had to stop their research in order to prepare papers for a conference (which felt to them like an interruption) that they made important discoveries about how to move forward with the next stage of research. At The Carnegie Foundation, we often talk about our work as attempts to provide mirrors and lenses that can assist others to pause, reflect, and see their work differently as they move into a next stage of activity. Thus, action without reflection is unlikely to produce learning.

Judgment and design are like understanding—only different. They're what happens when understanding meets the constraints and complexities of a world with respect to which we can no longer say (as we might in a world of ideas alone), "all other things being equal...." When I design a home, I work within constraints of budget, terrain, and lifestyle of the person for whom I'm designing it. I'm limited, too, by codes and regulations of the county in which it's being built; a home will look different in a tectonically challenged part of the world like Palo Alto, California, as opposed to one that is challenged by tornadoes, like East Lansing, Michigan. Design is a matter of exercising understanding, as well as applying skills, under a variety of constraints and contingencies.

By the same token, when we're asked to exercise judgment—and I think this is why Bloom put evaluation so high on his taxonomy—we are being asked to take into consideration multiple factors and constantly to compare those factors to values and standards that may themselves be shifting, in order to make some evaluative judgment about quality, courses of action, or people. So, while judgment is like understanding, it's also *not* the same, and, as educators, we need to go beyond teaching and assessing for understanding in order to foster judgment and design. Of course, the training of engineers is mostly about design, and education in areas like law, music, and art is often about judgment. There's much to be learned from these disciplines.

Finally, we come to *commitment*. As noted earlier, we experience commitment as we internalize values, develop character, and become people who no longer need to be goaded to behave in ethical, moral, or publicly responsible ways. We also commit ourselves to larger groups, larger communities, larger congregations, and professions at large—and by doing so, we make a statement that we take the values and principles of that group seriously enough to make them our own.

Therefore, commitment is both moving inward *and* connecting outward; it is the highest attainment an educated person can achieve, and it is also the most dangerous—I don't think I have to explain why, given the state of world affairs these days. An educated person, I would argue, is someone whose commitments always leave open a window for skeptical scrutiny, for imagining how it might be otherwise.

So, what does the Table of Learning look like with all of its elements working in concert, as a narrative? I proposed one for Bloom earlier, and here is mine.

Once upon a time someone was engaged in an experience of learning. And that engagement was so profound that it led to her understanding things she didn't understand before, and therefore gave her the capacity to practice and to act in the world in new ways. But once she starting acting in the world, she realized that action doesn't always work out as intended, so she had to start looking at what she was doing and at the consequences of her actions. This meant re-examining her actions to see whether she might want to act differently.

Through that kind of reflection on her own performance and understanding, she became wiser and capable of making judgments and devising designs in situations that were progressively more uncertain. And as she did so, she began to internalize the values that she had been exposed to, at which point she was no longer merely engaged but truly committed. Those commitments, in turn, disposed her to seek out new engagements, which led (of course the story is a circle) to new understandings and practices....

Isn't that a lovely story? Well, we can tell a similar story using Perry's Model, Kohlberg's Stages of Moral Development, or the levels of Dante's Inferno (indeed, learning is what Dante's epic poem is all about). And again, these are not trivial narratives because they offer us coherent ways of thinking

about why we do what we do, where we're coming from, and where we're going as educators.

What is important about these taxonomies is that they are indeed heuristics. They help us think more clearly about what we're doing, and they afford us a language through which we can exchange ideas and dilemmas. They point to the mutually interdependent facets of an educated person's life of mind, of emotion, and of action. They are powerful in these ways as long as we don't take them too seriously, as long as we don't transform mnemonic into dogma or heuristic into orthodoxy.

Shuffling the Deck: Playing at the Table

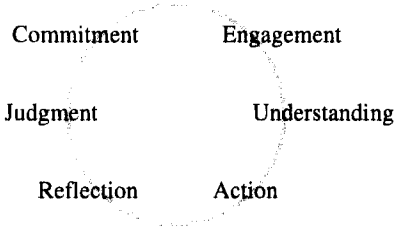
One way to forestall premature cementing and misuse of the categories is to recognize from the beginning that there is no single "first stage." For example, while the Table of Learning lists *commitment* as the terminal stage of a sequence, the closing chapter of the narrative as it were, it's possible to imagine a situation in which commitment is itself the starting point for new learning.

Several years ago, I had the wonderful experience of visiting Messiah College as part of The Carnegie Foundation's work on moral and civic education. One thing that struck me was that Messiah's students arrive already committed. As a faith-based institution, the college naturally attracts students from religious families—students who are members of congregations and who already have a deep-seated set of commitments.

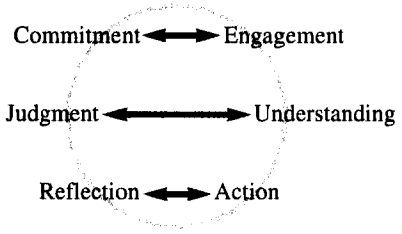
Our site-visit team talked to students about the goal of the first-year experience at Messiah, and they said, as with one voice, "The faculty is out to challenge our faith." And the reason, as our interviews with faculty made clear, is that students' prior commitments need to be exposed to the crucible of engagement with texts and people with different views. Only then, only through new engagements, can stronger commitments be formed. For Messiah, therefore, the Table of Learning might well look like this:

Commitment (to religious beliefs and practices)
Performance (of rituals and prosocial actions)
Engagement (with new texts and ideas)
Understanding (of new ideas and doubt of certainty)
Reflection (on tension between faith and "reason")
Judgment (deliberations, dialectics, debates)
New Commitment (to beliefs, practices, faith, and reason)
New engagements....

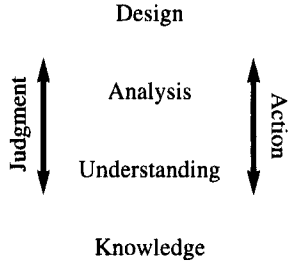
What's interesting is the cyclical quality of all this. Successfully committed people are more disposed to engage—they don't just sit home and feel committed (although that depends on whether it's an intransitive or transitive verb, doesn't it?). Commitment is a powerful stage in the learning process because it engenders new engagements, which in turn engender new understandings, and so forth.



If commitment and engagement have a potentially paired relationship with one another, might this be the case for other learning goals as well? For example: How do we get understanding to lead to the capacity for judgment and design when the conditions in which understanding can be displayed become fuzzier, more variable, more ambiguous, less readily controlled? And how, once we have engendered in people the disposition to act in the world, do we get them to stop acting and to step back in order to think about what they're doing? The next diagram emphasizes those particular pairings within the cycle of learning.



Which leads me to another observation about these taxonomies, which is that taxonomies exist to be played with, not to be read devotionally. Let me give you an example of playing with a taxonomy.



What this version of the table suggests is that knowledge, understanding, analysis, and design each need, on the one hand, to be worked upon in a critical and reflective manner via judgment, and, on the other hand, to be enacted in practice as a crucible or reality-test for the ideas. You may think of yet other ways to relate the central terms. My point is that once we feel comfortable with a set of terms, we can begin to play with them. They are, after all, propositions and not received wisdom; they are ideas that become useful when we treat them seriously and yet with a bit of skepticism, disrespect, and playfulness—which, interestingly, is an attitude that we try to foster in our students, as well, with regard to much of what we teach them.

In short, I propose the Table of Learning not because it's theoretically valid or true—no taxonomy is—but because I find it practically and theoretically useful, conceptually robust, and fun. (My categories are evocative of the classic Greek standards of good architecture: commodity, firmness, and delight.) Having these terms and ideas in front of me, in a small enough number so that I can actually hold them in my mind (which gets harder as I get older), is helpful because they serve as a mnemonic, a heuristic, a way of helping me think about a wide range of educational conditions and situations.

I find the taxonomy valuable, as well, because I can use it to think not only about students but also about *institutions*. NSSE is relevant here again because it recognizes that engagement may apply not only to individual students but to their institu-

We foster the transformation of thought into action, but we also strive to educate for delay, self-criticism, and reflection. These equally important goals must be taught and assessed in ways that taxonomies...can help us do in powerful ways.

tions. One now regularly hears the phrase "the engaged university." It rolls trippingly off the tongue, but it's important to begin defining more precisely what it means.

Is an engaged university one where certain patterns of engagements are characteristic of individuals or groups of students? Or is an engaged university one where students are highly motivated to engage with the texts and experiences that the institution deems valuable? Of course these are not mutually exclusive meanings. And one might ask the same question about other elements of the taxonomy. For example, what might it mean to be an "understanding university?"

With respect to "commitment," can we speak of an institution that matures from being merely engaged to one that is committed—and how would we know the difference? Here's one possible basis for knowing: If an institution becomes engaged because of its leadership and key people, from the president's office to the faculty, then what happens to the institution when those key people leave?

I might argue that at an engaged institution one would soon see a return to what was happening before, but at an institution that had moved from engagement to commitment, the culture of the place would remain changed. A committed institution's culture has been internalized in some fashion, so that even when the original perpetrators move on, the institution remains committed to continuing engagement. One of the great challenges for leadership is how to create this kind of committed institution, and it's one of the great challenges for us as teachers.

I can also use the Table of Learning to think about myself. A framework that leaves no room for describing the work of the person who created it should make us suspicious. This is what Merton meant when he talked about the need for theories to be "self-exemplifying." Similarly, Joseph Schwab, my teacher at the University of Chicago, once left us on a Friday with this little question: "And where is Plato on Plato's divided line? Where is Plato sitting in the cave when he is thinking about the cave?" It *killed* my entire weekend. And so the Table of Learning invites me to think about my own learning as a teacher and a scholar. Indeed, I would argue that it can, in some ways, serve for a model faculty development across the career, reminding us that *all* education is continuing education.

Antinomies and the Concordance of Opposites

Nancy Cantor and Steven Schomberg have written eloquently (in this issue) about their concept of education, and they pose a couple of intriguing antinomies. One is that undergraduate education involves a critical balance between playfulness and responsibility. On one hand, students come to our campuses to learn to play with ideas, which, paradoxically, means that they must take ideas seriously enough to consider playing with them. On the other hand, students come to our campuses to learn that education is also about developing a sense of obligation and responsibility to the society that will benefit from their capacity to play with ideas ever more creatively and insightfully. In a similar vein, they see the university as simultaneously a place apart—the ivory tower is needed because it's hard to play in the middle of Times Square—*and* a place connected to communities and to society.

As we look at our purposes for education, and at the taxonomies that aim to give language and shape to those purposes, we need to keep front and center our recognition of the contrasts, the tensions, the antinomies—seeing them not as problems but as opportunities to define our roles. Engagement on the part of students is a goal, and we ought to stipulate it and measure it and take responsibility for it, but there are times and purposes for which we will instead seek *dis*engagement.

These are not contradictions; they are mutually supportive, compatible, and interdependent. We seek understanding for the pleasure and confidence it brings, and we seek puzzlement or self-conscious ignorance for the mental itching and scratching it engenders. We want students who will leave our institutions deeply committed to values and civic and moral responsibility; yet we must never forget that they must also be committed to skepticism and doubt. We foster the transformation of thought into action, but we also strive to educate for delay, self-criticism, and reflection. These equally important goals must be taught and assessed in ways that taxonomies, properly understood and used, can help us do in powerful ways.

A Look in the Mirror

In the spirit of self-critical reflection, I want to conclude by expressing some misgivings I have about the elements that appear in the Table of Learning—and about what's missing. In particular, I'm sensitive to the potential or apparent absence of emotion, collaboration, and the centrality of trust.

Although engagement and commitment are certainly constructs intended to convey a strong component of emotion and feelings, I worry that the table as a whole feels overly cognitive. How might it be revised or interpreted to remind those who use it of the centrality of the emotions in the motivation to learn, the exercise of reason, and the development of character—all legitimate and necessary aspects of any vision of the well-educated person? This is something I will continue to think about.

The table may also seem to convey a strongly individual orientation. Yet engagement is often collaborative with others, and commitment frequently involves the development of, and membership in, communities. Moreover, the exercise of understanding, practice, reflection, and judgment or design is increasingly collaborative in character, drawing upon distributed expertise adroitly combined, rather than on the power of solo performances.

In both the emotional and collaborative aspects of learning, the development of trust becomes central. Learners must learn

both to trust and to be worthy of trust. If learners are to employ their achievement of the goals of liberal and professional education to take on the responsibilities of leadership in a democratic community and society, their good judgment needs to be exercised in a context of trust and interdependence. Are these perspectives utterly missing in the table? Or are they embedded in the ideas, if only those who use them are conscious of them?

Taken together, these concerns about missing or under-emphasized features of the table remind us that although a taxonomy is not a theory, it shares many of the virtues and liabilities of theory. A system of categories is an attempt to simplify and order a complex and chaotic world. The unavoidable price of simplification is to make some views salient while others fade into the background. That is why all such systems need to be used with a combination of reverence and skepticism.

What then do I hope for this Table of Learning? I hope it will be useful precisely because its parts are so familiar. It offers us familiar blocks to rearrange, with its echoes of Bloom and Perry, of Krathwohl and Kohlberg. I hope that it will serve as a set of heuristics, as a stimulus for thinking about the design and evaluation of education, and as the basis for creative narratives about the learning process. Indeed, I hope it will variously contribute to all the functions I described earlier as the uses of taxonomies. I hope it will guide and inform both invention and critique. And I certainly hope that it will be used playfully rather than devotionally or dogmatically.

When speaking of the goals of science, Alfred North Whitehead once declared, "Seek generalizations—and distrust them!" In the same spirit, I urge you, "Seek taxonomies—and play with them!"

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