Competence, Technology, and Their Discontents

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In every spring, it seems, higher education finds something attractive in the flower pollen. This year, it is the discovery of competence as superior to course credits, and in an embrace of that notion in ways suitable to the age and its digital environments This may be all well and good for the enterprise, as long as we acknowledge its history and key relationships over many springs.

Alverno offered authentic competency-based degrees in the 1970s (as did a few others at the periphery of our then institutional universe), and, for those who noticed, started teaching us what assessing competence means. Competence vaulted over credits in the 1984 higher education follow-up to "A Nation at Risk," blandly titled "Involvement in Learning." In fact, 9 of the 27 recommendations in that federal document addressed competence and assessment (though the parameters of the assessments recommended were fuzzy). Nonetheless, "Involvement" gave birth to the “assessment movement” in higher education, and, for the moment of a few years, some were hopeful that faculty and administrators would take advantage of the connections between their regular assignments and underlying student behaviors in such a way as to improve those connections in one direction, improve their effects on instruction in another direction, and provide evidence of impact to overseers public and private. There were buds on the trees.

But the buds did not fully blossom. Throughout the 1990s, “assessment” became mired in scores of restricted response examinations, mostly produced by external parties, and, with those examinations, “value added” effect size metrics that had little to do with competence and even less impact on the academic lives of students. The hands of faculty -- and their connecting stitching of instruction, learning objectives, and evidence -- largely disappeared. The educati took over; and when another spring wind brought in business models of TQM and CQI and Deming Awards, assessment got hijacked, for a time, by corporate approaches to organizational improvement which, for better or worse, nudged more than a few higher education institutions to behave in corporate ways.

Then cometh technology, and in four forms:

First, as a byproduct of the dot-com era, the rise of industry and vendor IT certifications. We witnessed the births of at least 400 of these, ranging from the high-volume Microsoft Certified Systems Engineer to documentation awards by the International Web Masters Association and the industrywide COMPTia. It was not only a parallel postsecondary universe, but one without borders, and based in organizations that didn't pretend to be institutions of higher education. Over 2 million certifications (read carefully: I did not call them "certificates") by such organizations had been issued worldwide by 2001, and, no doubt, some multiple of that number since. No one ever kept records as to how many individuals this number represented, where they were located, or anything about their previous levels of education. Credits were a foreign commodity in this universe: demonstrated competence was everything. Examinations delivered by third parties (I flunked 3 of them in the course of writing an analysis of this phenomenon) documented experience, and an application process run by the vendor determined who was anointed.

No one knows whether institutions of higher education recognized these achievements, because no one ever asked. The only question we knew how to ask was whether credit was granted for different IT competencies, and, if so, how much. Neither governments nor foundations were interested. The IT certification universe was primarily a corporate phenomenon, marked in minor ways, and forgotten.

Second, the overlapping expansion of online course and partial-course delivery by traditional institutions of higher education. This was once known as "distance education," delivered by a combination of television and written mail-in assignments, administered typically by divisions on the periphery of most IHEs. Only when computer network systems moved into large or multicampus institutions could portions of courses be broadly accessed, but principally by resident or on-site students. Broadband and wireless access in the mid-1990s broke the fence of residency, though in some disciplines more than others. Some chemistry labs, case study analyses, cost accounting problems, and computer programming simulations could be delivered online. These were partial deliveries in that they constituted those slices of courses that could be technologically encapsulated and accessed at the student's discretion. "Distance education" was no longer the exclusive purvey of continuing education or extension divisions: it

was everywhere.

Were the criteria for documenting acceptable student performance expressed as "competencies," with threshold performance levels? Some were; most were not. They were pieces of course completion, and with completion, the standard award of credits and grades. They came to constitute the basis for more elaborated "hybrid" courses, and what is now called "blended" delivery.

Third, the rise of the for-profit, online providers of full degree programs. If we could do pieces of courses on-line, why not whole courses? Why not whole degree programs -- and sell them? Take a syllabus and digitize its contents, mix in some digital quizzes and final exams (maintain a rotating library of both). Acquire enough syllabuses, and you have a degree. But not in every field, of course. You aren't going to get a B.S. in physics online -- or biology, agricultural science, chemistry, engineering of any kind, art, or music (pieces, yes; whole degrees, no).

But business, education, IT, accounting, finance, marketing, health care administration, and psychology? No problem! Add online advisers, e-mail exchanges both with instructor and small groups of students labeled a "section," and the enterprise begins to resemble a full operation. The growing market of space-and-time mobile adults makes it easy to avoid questions about high school preparation and SAT scores. A lot of self-pacing and flexibility for those space-time mobile students. Adding a few optional hybrid courses means leasing some brick-and-mortar space, but that is not a burden. Make sure a majority of faculty who write the content that gets translated into courseware hold Ph.D.s or other appropriate terminal degrees, obtain provisional accreditation, market and enroll, start awarding paper, become fully accredited and, with it, Title IV eligibility for enrollees, and ... voila! But degree criteria were still expressed in terms of courses/credits.

Fourth, the MOOCs, a natural extension of combinations of the above. "Distance education" for whoever wants it and whenever they want it; lecture sets, except this time principally by the "greats," delivered almost exclusively from elite universities, big audiences, no borders (like IT certifications), and standard quizzes and tests -- if you wish to document your own learning, regardless of whether credit would ever be granted by anybody. You get what you came for -- a classic lecture series. Think about what's missing here: papers, labs, fieldwork,

exhibits, performances. In other words, the assignments through which students demonstrate competency are absent because they cannot be implemented or managed for crowds of 30,000, let alone 100,000 -- unless, of course, the framework organization (not a university) limits attendees (and some have) to a relatively elite circle.

Everyone will learn something, no doubt, whether or not they finish the course. The courses offered are of a limited range, and dependent on the interests (teaching as well as themes of research) of the "greats" or the rumblings of state legislators to include a constricted set of "gateways" so as to relieve enrollment pressures. These are signature portraits, and as the model expands to other countries and in other languages, we'll see more signatures. But signatures cannot be used as proxies for competencies, any more than other courses can be used that way. There is nothing wrong with them otherwise. They serve the equivalent of all those kids who used to sit on the floor of the former Borders on Saturdays, reading for the Java2 platform exam.

This time, though, we sit on the floor for the insights of a great mind or for basic understanding of derivatives and integrals. If this is what learners and legislators want, fine! But let's be clear: there are no competencies here. And since degrees are not at issue, there are no summative comprehensive judgments of competence, either.

The Discontents

Obviously missing across all of the technologies, culminating in the current fad for MOOCs, are the mass of faculty, including all our adjuncts, hence potential within-course assignments linked to student-centered learning behaviors that demand and can document competencies of different ranges. Missing, too: within-institutional collaboration, connections, and control. However a MOOC twists and turns, those advocating formal credit relationships with the host organizations of such entities are handing over both instruction and its assessment to third parties -- and sometimes fourth parties. There is no organic set of interactions we can describe as teaching-and-learning-and-judgment-and-learning again-and teaching again-and judging again. At the bottom line, there are, at best, very few people on the teaching and judging side. Ah, technology! It leaves us no choice but to talk about credits.

And then there is that word on every 2013 lip of higher education, "competence."

Just about everyone in our garden uses the word as a default, but nobody can tell you what it is. In both academic and non-academic discourse, "competence" seems to mean everything and hence nothing. We have cognitive, social, performance, specialized, procedural, motivational, and emotional competencies. We have one piled on top of another in the social science literature, and variation upon variation in the psychological literature.

OECD ran a four-year project to sort through the thickets of economic, social, civil, emotional, and functional competencies. The related literature is not very rewarding, but OECD was not wrong in its effort: what we mean and want by way of competence is not an idle topic. Life, of course, is not higher education, and one's negotiation of life in its infinite variety of feeling and manifestation does not constitute the set of criteria on which degrees are awarded. Our timeline is more constrained, and our variables closer at hand. So what are all the enthusiasts claiming for the "competence base" of online degrees or pieces, such as MOOCs, that may become part of competence-based degrees (whatever that may mean)? And is there any place that one can find a true example?

We are not talking about simple invocations of tools such as language (just about everyone uses language) and "technology" (the billion people buried in iPhones or tweeting certainly are doing that, and have little trouble figuring out the mechanics and reach of the next app).

Neither are the competencies required for the award of credentials those of becoming an adult. We don't teach "growing up." At best, higher education institutions may facilitate, but that doesn't happen online, where authentic personal interactions (hence major contributors to growing up) are limited to e-mails, occasional videos, and some social media. Control in online environments is exercised by whoever designed the interaction software, and one doesn't grow up with third-party control.

At the core of the conundrum is the level of abstraction with which we define a competence. For students, current and prospective, that level either locks or unlocks understanding of what they are expected to do to earn a credential. For faculty, that level either locks or unlocks the connection between what they teach or facilitate and their assignments. Both connections get lost at high levels of abstraction, e.g., "critical thinking" or "teamwork," that we read in putative statements of higher education outcomes that wind up as vacuous wishlists. Tell

us, instead, what students do when they “think critically,” what they do in “teamwork,” and perhaps we can unlock the gate using verbs and verb phrases such as “differentiate,” “reformulate,” “prioritize,” and “evaluate” for the former, and “negotiate,” “exchange,” and “contribute” for the latter. Students understand such verbs; they don’t understand blah.

How “Competence” in Higher Education Should be Read

How will we know it if we see it? One clue will be statements describing documented execution of either related cognitive tasks or related cognitive-psychomotor tasks. To the extent to which these related statements are not discipline-specific (though they may be illustrated in the context of disciplines and fields) they are generic competencies. To the extent to which these related statements are discipline- or field-specific, they are contextual competencies. In educational contexts, the former are benchmarks for the award of credentials, the latter are benchmarks for the award of credentials in a particular field. All such statements should be grounded in such active verbs as assemble, retrieve, differentiate, aggregate, create, design, adapt, calibrate, and evaluate. These language markers allow current and prospective students to understand what they will actually do. These action verbs lead directly and logically to assignments that would elicit student behaviors that allow faculty to judge whether competencies have been achieved. Such verbs address both cognitive and psychomotor activities, hence offer a universe that addresses both generic performance benchmarks for degrees and subject-specific benchmarks in both occupationally-oriented and traditional arts and sciences fields.

Competencies are not wishlists: they are learned, enhanced, expanded; they mark empirical performance, and a competency statement either directly — or at a slant — posits a documented execution. Competencies are not “abilities,” either. In American educational discourse, “ability” should be a red-flag word (it invokes both unseemly sides of genetics and contentious Bell curves), and, at best, indicates only abstract potential, not actualization. One doesn’t know a student has the “ability” or “capacity” to do something until the student actually does it, and the “it” of the action is the core of competence.

What pieces of the various definitions of competence fit in a higher education setting where summative judgments are levied on individuals’ qualifications for degrees?

- the unit of analysis is the individual student;
- the time frame for the award of degrees is sometimes long and often uneven;
- the actions and proof of a specific competence can be multiple and take place in a variety of contexts over that long and uneven time frame;
- cognitive and/or psychomotor prerequisites of action and application are seen and defined in actions and applications, and not in theories, speculations, or goals;
- the key to improving any configuration of competencies lies in feedback, clarification questions, and guidance, i.e., multiple information exchange;
- there is a background hum of intentionality in a student's motivation and disposition to prove competence; faculty do not teach motivation, intentionality, and disposition — these qualities emerge in the environment of a formal enterprise dedicated to the generation and distribution of knowledge and skills; they are in the air you breath in institutions of higher education;
- competencies can be described in clusters, then described again in more discrete learning outcome statements;
- the competencies we ascribe to students in higher education are exercised and documented only in the context of discipline-based knowledge and skills, hence in courses or learning experiences conducted or authorized by academic units;
- that is, the Kantian maxim applies: forms without intuitions are empty; we can describe the form, the generic competence, without reference to field-specific knowledge, but the competence is only observed and documented in field-specific contexts;
- the Kantian maxim works in the other direction, too: intuitions without forms are blind, i.e., if we think about it carefully, we don't walk into a laboratory and simply learn the sequence of proper titration processes, nor are the lab specifications simply assigned. Rather, there is an underlying set of cognitive forms for that sequence — planning, selection, timing, observation, recording, abstracting — that, together, constitute the prerequisite competencies that allow the student to enact the Kantian sentence.

When Technology and Competence Intersect

How does all this interact with current technological environments? First, acknowledge that institutions, independent sponsors, vendors, and students will use the going technologies in the normal course of their work in higher education. That's a given, and, in a society, economy, and culture that surrounds our daily life with such technologies, students know how to use them long before they enter higher education. They are like musical instruments, yes, in that it takes practice to use them sufficiently well, but unless you are writing code or designing Web navigation systems, there's a cap on what "sufficiently well" means, and abetted by peer interactions, most students hit that cap fairly easily.

Second, there are a limited number of contexts in which competencies can be demonstrated online. For example, laboratory science simulations can't get to stages at which smell or texture comes into play (try Benzene, characterized as an aromatic compound for a good reason); studio art is limited in terms of texture and materials; plants do not grow for you in simulations to measure for firmness in agricultural science. Culinary arts? When was the last time you tasted a Beef Wellington online? Forget it!

Third, if improvement of competency involves a process of multiple information-exchange, with the student contributing clarification questions, there are few forms of technological communication that allow for this flexibility, with all its customary pauses and tones. Students cannot be assisted in the course of assignments that take place beyond the broadband classroom, e.g., ethnographic field work. Those students who have attained a high degree of autonomy might be at home in a digital environment and can fill in the ellipses; most students are not in that position, and require conversation and consultation in the flesh. And since when did an online restricted response exam provide more than a feedback system that explains why your incorrect answer was incorrect, but you may not understand two of the four explanations -- and there is no further loop to help you out other than sending you back to a basal level that lies far outside the exam.

All of that is part of the limited universe of assessment and assignments in digital environments, and hence part of the disconnect between what is assumed to be taught, what is learned, and whether underlying competencies are elicited, judged, and linked. People do all these jobs; circuits don't.

So much for what we should see. But what do we see. Not much. Not from the

MOOC business; not from the online providers of full degree programs; not from most traditional institutions of higher education. Pretend you are a prospective student, go online to your sample of these sources, and see if you can find any competency statements -- let alone those that tell you precisely what you are going to do in order to earn a degree. You are more likely to see course lists, offerings, credit blocks, and sequences as proxies for competence. You are more likely to read dead-end mush nouns such as “awareness,” “appreciation,” and the champion mush of them all -- “critical thinking.” None of these are operational cognitive or psychomotor tasks. None of these indicate the nature of the execution that will document your attainment. The recitations, if and when you find them, fall like snow, obliterating all meaningful actions and distinctions.

So Where Do We Turn in Higher Education?

There’s only one document I know that can get us halfway there, and it is more an iterative process than a document, and a process that will take a decade to reach a modicum of satisfaction. Departing from both customary practice and language is the Degree Qualifications Profile (DQP) set in an iterative motion by the Lumina Foundation in early 2011, and for which, in the interests of full disclosure, I was one of four authors. What does it do? What did we have in mind? And how does it address the frailties of both technology and the language of competence?

Its purposes are to provide an alternative to metric-driven “accountability” statements of IHEs, and to clarify what degrees mean using statements of specific generic competencies. Its roots are in what other countries call “qualification frameworks,” as well as in a discipline-specific cousin called tuning (in operation in 60 countries, including five state systems in the U.S.). The first edition DQP includes 19 competencies at the associate level, 24 for the bachelor’s, and 15 for the master’s -- all irrespective of field. The competencies are organized in five archipelagos of knowledge, intellectual skills, and applications, and all set up in a ratcheting of challenge level from one degree to the next. They are summative learning statements, describing the documented execution of cognitive tasks -- not credits and GPAs -- as conditions for the award of degrees. The documented execution can take place at any time in a student’s degree-level career, but principally through assignments embedded in course-based instruction (though that does not exclude challenge examinations or other non-course based assessments). However course-based the documentation might be, the DQP is a

degree-level statement and courses cannot be used as proxies for what it specifies. Competencies as expressed here, after all, can be demonstrated in multiple courses.

The DQP is neither set in stone nor sung in one key. Don't like the phrasing of a competency task? Change it! Think another archipelago of criteria should be included? Add it! Does the DQP miss competencies organic to the mission of yours and similar institutions? Tell the writers, and you will see those issues addressed in the next edition, due out by the end of 2013.

For example, the writers know that the document needs a stronger account of the relation between discipline-based and generic degree requirements, so you will see more of tuning (Lumina's effort to work with faculty to define discipline-based knowledge and skills) in the second edition. They also know that the DQP needs a more muscular account of the relation between forms of documentation (assignments), competencies, and learning outcomes, accounting for current and future technologies in the process, as well as for potential systems of record-keeping (if credits here they are only in the back office as engines of finance for the folks with the green eye shades).

All of this -- and more -- comes from the feedback of 200 institutions currently exploring the DQP, and testifies to what "iteration" can accomplish. This is not a short-term task, nor is it one that is passed to corporate consultants or test developers outside the academy. I would not be surprised if, after a decade of work, we saw 50 or 60 analogous but distinct applications of the DQP living in the public environment, and, as appropriate to the U.S., outside of any government umbrella. That sure is better than what we have now and what has been scrambled even more by MOOCs -- something of a zero.

It has been a long road from the competence-based visions of the 1970s, but unraveling discontents will help us see its end. We know that technologies and delivery systems will change again. That, in itself, argues for the stability of a competence-referenced set of criteria for the award of at least three levels of degrees. Some of the surface features of the DQP will change, too, but its underlying assumptions, postulates, and language will not. Its grounding in continuing forms of human learning behavior guarantees that reference point. All the more reason to stand firm with it.

BIO

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