

# Assessment Standards: Recentering and Decentering Higher Education

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At this point in time, the end of the first decade of the Twenty-first Century, one would be hard pressed to find a Mathematics professor in the United States not painfully aware that too many students arrive at college holding High School diplomas, but with math skills that are so poor that they need remediation. Remedial math courses, as one would expect, rarely carry credit towards college graduation. This situation has obvious cost-benefit ramifications: a student in remediation, for which he gets no credit, is obviously going to consume proportionally more state money, in the form of financial aid, than he would have if he had not needed this non-credit-bearing help.

I am a member of a task force charged by the state of Wisconsin to identify the core competencies needed in Mathematics in order that diploma-bearing students need no college-level remediation. I have attended conferences and workshops, sponsored either by my state or by the Mathematical Association of America (MAA) where the focus has been to improve the teaching of Science, Technology, Engineering and Mathematics (STEM) subjects. At such conferences, and as part of the task force, I am invariably told by someone who proclaims to all who will listen that “I don’t teach Mathematics; I teach students.” On its face, such a proclamation is the very essence of student-centeredness, but, I confess, I often find it difficult not to retort “And do your students learn Mathematics, or do they learn you?”

Philosophical questions, especially in this (almost post-) post-modern world, tend to turn on what we mean by the words we use. The bumper sticker logic of who/what gets taught/learned hides and so leads us, in searching for the hidden, to ponder just what is meant by “teach”. In the declarations “I teach Mathematics”, and “I teach students”, the transitive nature of “teach” is apparent. The identical English grammatical structure leads us to suppose that the objects of the declarations are equivalent, hence alternative, and hence in opposition. Should I be Mathematics-centered or should I be student-centered? On the other hand, if we ask ourselves what prepositions might be appropriately inserted into our uninflected English, something significant happens. I teach *to* my students. I teach *about* Mathematics. The two objects are not, in this sense, grammatically equivalent, revealing that they are not *in fact* equivalent. If they are not equivalent, how can we presume that they are alternatives? Why do we place being student-centered and being discipline-centered in opposition to each other? If I do not teach Mathematics, but rather I teach my students, exactly what am I teaching those students? The *a priori* declaration is that it is not Mathematics, whatever else it may be. Is it not, however, valid to declare “I teach *about* Mathematics *to* my students.”?

The Derridean notions of “center” and “centeredness” are, I hope to demonstrate, intrinsic to philosophical questions about the “Culture of Assessment” (Derrida, 1972). Indeed, the assertion that a construct may have more than one center is one that every mathematics teacher should be completely at ease with. Any Euclidean triangle has a circumcenter, an incenter and an orthocenter, and, if the triangle is scalene, these are distinctly different points from each other. In precisely this way, I have no trouble considering my teaching to be both student-centered and subject-centered, because the centeredness means something different in either case. If, at any moment in time, I am considering the incenter of a triangle, this does not, for an instant, deny the existence of the orthocenter, which is also inherent to the nature – the very existence – of the triangle. Consideration of

the orthocenter does not annihilate the circumcenter. None of these centers of the triangle is any more or less fundamental to its existence. It is impossible for me to teach my subject without teaching it to students. Perhaps, then, a better notion than a focus on a particular center is the more dynamic notion of juggling; I can let neither my students nor my discipline fall to the ground.

I have suggested that my teaching can have two centers, my students and my subject. How many centers can it reasonably have? How many balls can I juggle? Can I, as teacher, also be centered on Assessment? A very premature answer to this question is: "Yes, quite apparently I can. I have been so all of my professional life, as have most of my colleagues and predecessors". But this is a premature response precisely because it does not consider what is meant by "Assessment". To assess is, perhaps, even more transitive than to teach, because the objects of this new action are even more diverse. Am I assessing my subject, my program, my students, my teaching? For whom am I doing the assessment? If having two objects of the verb *to teach* leads to counterproductive equivocation, how much more fraught with peril is the situation where the objects are multiplied?

Mathematics is intrinsically a discipline where the performance of all the actors can be, and has been, objectively assessed. Whereas many teachers, in the Humanities for example, need complicated rubrics to objectively, consistently and fairly grade their students, a mathematics teacher simply evaluates whether each step in a student's work is right or wrong. This is, of course, something of a paradigmatical oversimplification, but it is not, in reality, too far from the truth. Similar claims about the assessment of mathematics programs and teachers can also be made, and I will consider these claims below. What I want to consider, for the moment, is the use of the term "rubric" to describe assessment instructions. The history of this term goes back to the Middle Ages. "Rubric" is cognate with "ruby" and indicates something written in red. Specifically, our modern use of the word evolved out of instructions, written in prayer books, telling when to stand, sit, kneel, etc. The word, I would submit, has not evolved so far from its medieval meaning, and still carries some religious intent. At the most benign level, we are reminded that we are taking part in a service. Slightly more troubling, perhaps, is the notion that, in order to make the assessment more objective, more consistent, the clear instructions allow for less personal judgment and wisdom. The instructions can become almost ritualistic. But personal judgment and wisdom, surely, are inherent to the Humanities, perhaps their ultimate *raison d'être*, and so removing them from assessment seems rather counterintuitive. I, however, am not a teacher of the Humanities, and so it is inappropriate for me to do too much analysis of the assessment of those disciplines. I want to raise the notion that something quasi-religious is taking place, although I will defer naming the deity for the time being.

There is a rather ironic history to the assessment of student work in Mathematics. How well a student has done in an exercise has always been clearly, objectively and quantifiably measured. In order to achieve the same level of clarity, objectivity and quantifiability in the assessment of student work, other disciplines have needed to construct ingenious rubrics. In as much as these rubrics have been created and continue to be created, other disciplines are following the model of Mathematics. Now, however, with the Culture of Assessment that we are all required to subscribe to, mathematics teachers are beginning to be asked to supply rubrics for their assessment of students. It is a rare image that is not something of a distortion. Mathematics teachers are now being asked to emulate, to a degree, an image of themselves. I would submit that, not only is an image of an image somewhat unlikely to be faithful to the original, it is less than wise for the original to attempt to mimic its mimics. Nevertheless, the mathematics teacher is asked to supply rubrics, and I shall consider the motivations behind this request as we progress.

Assessment is not only of students. We must also assess ourselves as teachers, our pedagogical methods and our programs. One definite benefit of the Culture of Assessment has been that it requires teachers of Mathematics to reflect on their own effectiveness and on that of their teaching methods. The fact, however, is that this kind of assessment, has also always been readily available to the teacher of Mathematics. If a student does not learn a particular piece of material, if a whole class does not learn what is expected, it is only too obvious that there has been a failure somewhere. The teacher who is committed to his students' learning, who is student-centered has, I would submit, always recognised that the failure may, in part or in whole, have been his, or that

of his pedagogy, and he has striven to remedy the situation. Unfortunately, it has, in the past, been rather too easy for the same teacher to recognise the all too obvious failure, and direct the blame away from himself. Eventually, the school system has tended to catch up with some ineffective teachers, and do what it can to remediate the situation, but, equally evidently, sometimes it has not. The point is then, when it came to the effectiveness of his teaching, not that the mathematics teacher did not have adequate assessment tools at his fingertips, but that he may not always have used them. At the moment, with the Culture of Assessment, there is certainly more of an expectation of self reflection than in epochs past. It remains to be seen whether this extra scrutiny will be cost effective in the long run.

Just as Mathematics has always been inherently rich in objective, quantifiable assessment of students, it has also been as rich in the assessment of its programs. This has been achieved through a well considered construction of course prerequisites. If a student has not mastered certain material, he will find it very difficult to grasp what comes next... This has always provided a very accurate extra and external assessment of how well a teacher has taught in a previous course. If he consistently fails to teach material in an earlier course in such a way that his students really learn that material, then that deficit becomes painfully apparent in the next course in the sequence, or even when that understanding is crucial to learning material presented later in the same course. Further, it becomes apparent that students may find certain material difficult to master precisely because something has not been included earlier, and this assessment causes the program to be reconfigured. In other words, the traditional mathematics program, carefully constructed so that, at any time, the student should have the necessary skills to master new mathematics, has been carefully constructed to be self assessing.

No system is perfect, and, at the college level, this system, perhaps, has the drawback that that it has not been adequately "sold" to colleagues from other disciplines. Advisors recommend that their advisees take mathematics courses for which they quite apparently do not have the prerequisite background knowledge. The programmatical assessment that we are led to is to be found somewhere along the continuum between the two explanations that either mathematics faculty have not adequately educated their colleagues about the fineness of the tuning of the mathematics program, or that colleagues do not care to be so educated. The courses are seen as checkboxes to be filled, not as rich with material needed to enable later learning. Ironically, an education system that is heavily dependent on testing, on assessment, has trained our students to have something of a similar attitude. Because there is such a focus on doing well on the assessment, some students learn material in a "load and dump" fashion, committing material to short term memory rather than long term understanding. On one level, assessment trains the students to disregard that the material in today's class is part of a program of learning leading to even deeper knowledge and understanding later on.

Of course, we have assessment tools to diagnose this situation. What then should our prescription be? To frequently test to make sure that students retain earlier skills, knowledge and understanding? To some degree we could do this and do, but this tactic makes mathematics even more onerous than many students already find it. More troubling, it reinforces the false notion that Mathematics consists of a collection of facts and formulae to be remembered rather than understood. A more constructive tactic, incorporating assessment into the learning itself, is to make sure that students frequently use earlier material, actively building on that foundation to acquire more skill and understanding. We invite the student, herself, to assess the contention that earlier material is needed now, and to infer that current material will be useful later in the sequence. This we try to do, but it leads to a pedagogical paradox. In mathematics, perhaps more than in any other educational endeavor, a student gets the notion, is actively, deliberately given the notion, that each new piece of learning is part of a greater whole. It depends on earlier learning and it will be foundational to later learning. Mathematics is going somewhere. Where? The answer is that, for the vast majority of students, the Mathematics program they are in is leading to Calculus. This is a carefully constructed, assessment-driven model of an educational program constructed long before the term "assessment" was being used in its current meaning and intensity. Mathematics leads to Calculus. But the majority of students never take Calculus. Mathematics is used in other subjects. But the majority of the Mathematics a student learns she will never use. A student is trained to perceive that Mathematics is applicable to something and is moving somewhere. Is it really surprising, then, if she never gets to the destination

and rarely gets to use the material, that she thinks of the subject as pointless and useless? Notice that in other subjects, the claims of destination and applicability are made far less frequently, either explicitly or implicitly, and so the student has less need to assess the subject by those standards. A student in a Western Civilization class, for example, rarely wonders when she will need to use the fact that the Great Plague was spread by fleas on rats, and if she does, it is because her whole perception of education is a utilitarian one. I do not mean to belittle any subject outside of my own; I merely mean to point out that History, for example, in the perception of many students, can be taken on its own merits. Of course, History is applicable outside of the classroom, but it need not be in order to be seen as worthwhile. Mathematics is sold as useful, and so it is seen as useless. Mathematics is sold as having a direction, and so it is seen as pointless.

I should point out that this is not a paradox unique to Mathematics; in exactly the same way, certain aspects of the English curriculum in American colleges are included for purely utilitarian reasons. I am thinking, in particular, about courses that train a student to write in various contexts and in various styles appropriate to those contexts. Perhaps, precisely because the average student is taught to see English as useful, she wonders what the use is of studying a play or a poem or a short story.

There has always been a tension in Mathematics between the pulls of “Pure Mathematics” and “Applied Mathematics”, just as there has been tension in the English curriculum between the pulls of “Language” (by which I mean “composition” rather than “linguistics”) and “Literature”. There is just such a tension in the Academy between utilitarian training and an education that, while it may well go deeper and broader than simple training, has an immediate usefulness that may be harder to assess, and so the education is proportionately harder to justify. The paradox is that, in Mathematics at least, and I suspect the same to be true of English, it is so often the case that that which is ultimately found to be the most useful, the most important, having the most impact, comes from purely non-utilitarian study, that which, on its face, has no immediate usefulness whatsoever.

I have said that Mathematics has always been assessment rich in some regards, although, admittedly and lamentably, not every teacher of the subject has availed himself of the assessment tools that have been to hand. However, and this cannot be stressed enough, “assessment” is prone to dangerous equivocation. That one justifies and applauds assessment in one context should not be construed as justification and approbation in another. The ultimate problem of a “Culture of Assessment” is one of not being critical about what assessment is good, what is meaningless, what is a waste of time and what is downright destructive. A “Culture of Assessment”, moreover, *a priori*, admits of little that cannot be assessed. This is of fundamental concern to a teacher of Mathematics; I do not care so much, for example, that my student can solve a quadratic equation using the Quadratic Formula, which is measurable and hence assessable; I care more that she understands what she is doing, which is, at least immediately, only vaguely measurable and so the assessment (at least *vis a vis* the Culture) is undeniably suspect. If she does understand, of course, she will be able to perform, which, again, is assessable. Further, contrapositively, I can assess whether she does not understand by her inability to perform. But it is an obvious mistake to assume the converse, that I can assess her understanding by her performance. Nevertheless, it is her understanding, the higher echelons of Bloom’s Taxonomy, that I am ultimately concerned with. Many teachers will assert that they “just know” whether a student understands or not, to which an acolyte of Assessment may justifiably ask “How do you know that you know?” Such existential questions easily leave us *mise en abyme*; how do we know that any assessment of her understanding or of our knowledge of her understanding is valid? How do we assess the assessment? Where do we place our axiomatic foundation? Is it any more justified to assume that an assessment of the recognition of understanding is valid than the simple claim that one recognises understanding when one sees it? I would make the claim, in this instance, that while I never truly know whether my student understands, my experience tells me when I can be fairly certain. Moreover, the very inbuilt assessment structure of Mathematics allows me even more certainty when, later in the course of her study, she is able to apply what she has learned earlier to novel situations.

It is not assessment, then, as such, that this Mathematics teacher objects to, but rather particular assessment constraints, embodied in the Culture of Assessment. In particular, if we are to be concerned with the assessment

of Outcomes, we should, too, be concerned with the outcomes of Assessment, the negative as well as the positive. How many programs around the country are, at this very moment, either already restructured or in the process of being restructured, not in order that they better serve the students or the discipline, but largely or even solely that they may be better assessed? Or, to be more accurate, that they be better *seen* to be assessed. When this happens, we are being neither student nor subject-centered. It is not hyperbolic to assert that this is an outcome of Assessment that we need to be excruciatingly aware of. Earlier, using the metaphor of the triangle, I made the claim that I was comfortable with a structure having multiple centers. A program restructured so that it may be better assessed becomes assessment-centered. At this point I find it hard to extend the metaphor inasmuch as the incenter and circumcenter of a triangle are both independent of the orthocenter. All three are dependent on the structure of the triangle rather than each other. Making a program assessment-centered, on the other hand, manifestly restructures that program and *a fortiori* changes both its student-centeredness and its discipline-centeredness. It is not apparent to me that this change must be for the good or for the ill, but it is a change that is inherent and hence needs must be negotiated.

Meta-assessment, assessing the Culture of Assessment, needs to start with an analysis of the assessment model currently in force in higher education. Very loosely speaking, an institution houses schools, which house departments and programs. The college has a carefully composed Mission Statement as do the schools, although their mission statements need to be aligned with that of the college. The departments and programs have Mission Statements that need to align with that of the school in which they are housed, and finally, the departments have student learning outcomes, aims and objectives, that need to align with the mission statement of the department or program in as much as alignment is even relevant. It is the responsibility of the institution to assess to what degree it lives up to each of these Mission Statements and achieves the aims, objectives and desired outcomes. There is then the process of Closing the Loop, whereby practices are modified or maintained depending on the assessment data or else the assessment questions are changed in order that success can be claimed. From the point of view of the mathematics teacher, here is another instance of center shifting. In the past, I was concerned with, for example, whether a student was able to use implicit differentiation to find the rate at which two objects were coming towards each other; now I need to address whether that problem aligns with my school's Mission Statement. In so much as I do need to justify my syllabus within the Mission Statement framework, this last statement is not completely hyperbolic.

The evolution of the Mission Statement is relatively simple. There was a time when colleges had no such thing, although they often had a college motto, often in Latin, something along the lines of "From Learning to the Light" or "Quantus est Canis in Fenestra". At some point a simple declaration of what the college believed itself to be and what it held dear was made. This statement was invariably, to greater or lesser degree, concerned with what might be termed "marketing". I do not, by this, mean to suggest that anything so crass as Madison Avenue style marketing was taking place, at least not at this point in history, simply that schools recognised something of a need to declare - to advertise - to prospective students what it was that they were offering. Was it a Liberal Arts education? Was it career training? But, inevitably, with the rise of an administrative class in higher education, each institution realised that it was in competition with other similar institutions, and that this was commercial competition, not just competition on the sports field. At this point, Saint Webster's College needed to have a unique Mission Statement in order to distinguish it from Mount McKinley Academy. A college found it needed to have a *brand*, and, one could not, as happened in the 1920's, declare "Guinness is Good for You", unless there was evidence to back the claim. There needs to be truth in advertising. We need to assess the claims we make. Notice that we begin to see something from the modern business world creeping into the Academy; packaging and advertising begin to take on an importance that rivals that of the actual product.

Another profound shift in center has thus taken place. Education was a *vocation*, a *profession*. We used *rubrics*. We declared *Mission Statements*. We saw what we did as a *service*. All of these statements have deeply religious connotations. Increasingly, we are abandoning our old service model of education and replacing it with a business model. We are less and less colleagues and more and more human resources. Considering the history of the Academy, it is no surprise that we traditionally used religious language. What is more worthy of comment is

that in the new paradigm we continue our religiosity. We continue our talk of Service and Mission. We follow rubrics. There is good reason to suspect that this is more than mere habit.

As an example of the new religiosity, there is a spectrum of attitudes to be seen among faculty members about the Culture of Assessment. Some, it must be admitted, have serious qualms about the enterprise, although they whisper them only in private; others are convinced of its benefits; still others adopt patience or resignation. All, in public, except for the most entrenched, tenured curmudgeon, recite the new *credo*, extolling the new Culture of Assessment. The Emperor may or may not be naked; he is still the Emperor.

Institutions of higher learning have been told, in no uncertain terms, that their accreditation depends on their embracing the Culture of Assessment. In my native England, in the Sixteenth Century, similar declarations of loyalty to the new Church of England were demanded. That this mandate comes, quite apparently, from outside the Academy, gives a further instance of recentering. But why should accrediting agencies be so concerned to impose on colleges models of quality control that seem to be taken from business? Accrediting agencies answer to Federal Government, which was, at the time that demands of assessment began to be made, during the Nineteen Eighties and then the first years of the Third Millennium, of a Business mindset, of a mindset that genuinely believed that there was no problem that could not be solved by free market forces. Of course there is danger of equivocation here. A business model, particularly a bureaucratic business model, is not necessarily a free-market model any more than Democracy is necessarily Capitalism. Nevertheless, at about the same time as the public school system was given the assessment constraints of No Child Left Behind, private institutions of higher education were expected to adopt a Culture of Assessment.

Looking at Higher Education through such a business lens, we should ask what the problem was that needed the curative of the Free Market. What was defective in the product that demanded systematic quality control, which is no more or less than what Assessment is in this context? A cynical response might be that business leaders expected the education system to do all the training needed to produce an effective and efficient workforce, and saw no justification in *their* tax dollars being spent on an education where they saw little return on the investment. If they were going to make the investment, they wanted some say in the product. This is consistent with a model of Education as a corporation that has major shareholders. Even more cynically, one might suppose that those same leaders saw, in higher education, a way for them to be relieved of any costs of training their workforce. There are certainly those who see Assessment as part of a systematic attack on the academy, an attack that also includes the kind of politics wherein a candidate is seen as unsuitable because she is “too intellectual”. Perhaps, though, these cynical views are as uncharitable as they are paranoid. I think that the governmental demands on the accrediting agencies come from a genuine belief in the power of the Free Market, in the ultimate good flowing from Business, and in the nature of the Free Market, in, to put it in religious terms, a reverence, if not outright worship, of Mammon.

Admitting that, on its face, this seems an outrageous supposition, what are its implications? Would we not expect to witness numerous doctrinal disputes and the imposition of religious edicts by those in power? This is exactly what we do see. Consider the objection that what is learned in a traditional Liberal Arts education has nothing to do with the “Real World”, and, indeed, that the average academic knows nothing about the “Real World”, living, as she does, in her “Ivory Tower”. The mathematics teacher, for example, needs to justify everything in the Mathematics curriculum as *real*, meaning immediately useful. However, the “Ivory Tower” is an absolute myth, and hence borders on the religious; the average academic goes to work every day, just like the average business woman or factory worker. She earns her pay and pays her taxes. She pays down her mortgage and feeds her family. She does what she can to save for her retirement. Precisely what aspect of her life is any less real than anyone else’s? The only possible answer is that it is the goods she produces. In this sense, the teacher of Poetry also stands accused of trading in the *unreal*. Questions about what is and what is not real are ultimately questions of philosophy and religion. One could suggest that buying and selling shares in “futures”, a normal part of the new Business model, is trading in the imagined, the imaginary, rather than in the real, and, indeed, it is just such trading in the imaginary that invariably ends in some financial bubble being burst, most

recently in the burst of the housing bubble, which very nearly brought about the collapse of the whole Western economy. I raise this point because it illustrates that, sometimes, there are facets of the current economic model that were designed in and for that model, that are perilous to the model itself. Would we not be wise, then, to scrutinize any aspect of that model we adopt for use in a structure – the education system – for which it was not designed?

Education, viewed through a business lens, requires business rules, which is what we see with the Culture of Assessment. A business model applied to what has long been regarded as a service or a vocation, a profession with its own norms and established, functioning traditions, implies a profound recentering. In the past, we assessed what was going on because we cared deeply about our disciplines and our students. On the other hand, if we are a business, concerned with products and profits, then we need to be seen to have quality control so that no one gets cheated. We still view what we do as vocation, as service, as profession. It is the religious belief that everything is part of the market that does not allow for any other vision than its own.

Religions are concerned with what outsiders may not believe exists, and another aspect of the Business model that is a clear example of trading in the non-existent is to be found in the current outcrop of indictments against perpetrators of pyramid schemes. Modern investors in such schemes have the historical example of such charlatans as Charles Ponzi to act as warning. Consequently, they are less likely to be gulled by a simple promise of a return on an unexamined investment. They require evidence that they are investing in *something*. The modern Ponzi has to create dummy stocks and shares, signifying investment in that which does not really exist. He does not need to offer real investments, but he does have to be *seen* to be offering real investments, whether they exist or not.

There is a frightening parallel in higher education. What is becoming paramount is not that an educator assesses, but that she be *seen* to assess. As in the situation we considered earlier of Mission Statements, we find that the packaging and advertising begins to rival the product. Indeed, from the very outset, the investors here demanded packaging and advertising over product. As I suggested earlier, programs in Mathematics have always been rich in assessment events. The assessor was, moreover, afforded exquisitely detailed assessment. When, however, accrediting agencies started to demand that we assessed ~ which we had always done ~ they needed to be shown that we were assessing. These agents were not mathematicians, and so had no understanding of our myriad *real* aims and objectives; nor had they any way to gauge whether we lived up to our promises. We were told to whittle down our student learning outcomes to between five and ten to “minimize the work we had to do”. In reality, all that was minimized was the amount of checking the accreditor had to do. We continue to assess what we have always assessed, because it is imperative to our students and our discipline that we do so. We assess whether or not a Calculus student has mastered Integration by Parts, for example, but we have also composed a handful of Student Learning Outcomes that are so broad and vague as to be worthless to us. These are dummy stocks, graven images, that serve as evidence that we are assessing. Indeed, we assess them by means of rubrics, which, although they give us little in the way of usable data, are discernable from outside the discipline. They are evidence that the accrediting agent, as investor, can use to see that the investment of accreditation has some chance of a return. We are *seen* to assess. This is in direct opposition to what we are told are “best practices” in assessment. Educators are told that they need to “own” the assessment, to develop assessments that are meaningful to them and their programs, not to the accrediting agencies. This is what mathematics educators have always done. The instruction to assess in a meaningful way and to use the assessment, and yet to do things differently from what we have done in the past is oxymoronic. This leaves a program vulnerable to cheapening. What does it matter whether a student is able to prove the Heine-Borel Theorem if she already knows how to prove the Cayley-Hamilton Theorem? They both address the Learning Outcome of being able to reason deductively. The fact that they address completely different mathematical situations is completely irrelevant to the assessment scheme.

Accrediting agencies are, then, vulnerable to academic Ponzi schemes, investment in programs that, while they have little disciplinary merit, have impressive assessment credentials. No educator who is either discipline-

centered or student-centered would willingly perpetrate such a scheme, but we would be naïve indeed, to expect that pressure to act in this way, would not be brought to bear on the educator by market forces in today's business model of education, a model that holds that a college is at least as much a business as it is a service, a business where the share holders demand a concrete return on their investment. Is it not a tenet of modern business that income should be maximized at the same time as outlay is minimized?

If it is true that the Culture of Assessment represents a business model of quality control imposed on the Academy and, indeed, that the Academy is moving further from its traditional service model to a modern business one, we might expect certain symptoms to be apparent. Imagine two businesses, founded in the later Eighteen or early Nineteen Hundreds, to manufacture bicycles. Both were founded by entrepreneurs to provide a service that the community needed. If the product was not of good quality and affordable, then the company went out of business. Over the years, the companies saw new business opportunities and diversified their products. This happened, of course in Higher Education also; institutions that were founded as normal colleges or seminaries are now "liberal arts" institutions. Now, at the beginning of the Twenty First Century, the bicycle makers who founded the companies are long dead. One company is still family owned and still tries to produce the kind of quality product that Great Grandfather Wilbur would be proud to put his name to. Their bikes have continued to evolve and exploit new materials, new designs, but are undeniably exceptional quality machines. Wilbur's spirit lives on in the product. The other company has been acquired by shareholders who are interested in the company not because it makes bicycles but because it makes a profit. Great Grandfather Orville lives on only in company commercials, as a young, Brilliantined mechanic with striped, collarless shirt and canvas apron. The only skills that are respected in Orville's company are business and marketing skills. For devotees of Mammon, these are the only *real* skills. The actual manufacture is by unskilled labor and automatic machinery. Indeed, the more automated the process becomes, the more interchangeable the workers are, and the less respect is warranted for any skills they may have learned throughout their careers. In years past, a welder had a very different skill set from that of a die caster and each assessed his or her work differently because it was different. These days quality control is less heterogeneous, mirroring the nature of the work. This is mirrored in the homogeneity of assessment expectations in the new Culture, as it is mirrored at institutions where, more and more frequently, the administration expects faculty members to teach classes in which they have no expertise, training or experience.

Most children today ride an Orville bike. They are cheap, readily available at big box stores, of consistent quality and, ultimately, throw-away items. Each of these product attributes is to be found in modern higher education, but it is the consistency of quality that most interests us at the moment. Consistency of quality tends to mean consistency of *acceptable* quality rather than *exceptional* quality. At Wilbur's company, on the other hand, the quality control is inherent in the work at every step of the way. There is no need to formally assess the work, because the workers are proud of the product, and their skills are respected by the company. They are colleagues, not human resources. It is this form of quality control, the continual, self-regulating and largely habitual kind, that leads to an excellent end product. Surely, this is what accrediting agencies have in mind when they speak of a Culture of Assessment. But any external imposition of quality control makes the habitual forced and the self-regulation oxymoronic. Quality control, imposed externally, may well produce acceptable standards, but it militates against the exceptional. On the other hand, self-regulation in business, where the business is driven by profit motives alone, often leads to exploitation of the system, even if the self-regulation is of governmentally imposed standards. Might we not expect Higher Education, if run on a business model, to begin to exhibit more and more exploitation of self regulation?

In as much as the American education system has not been producing an exceptional quality product, perhaps some form of quality control is necessary. Mathematics teaching stands accused here. American mathematical skills, in the general population, seem to be lagging seriously behind those of much of the rest of the world. There are, of course, different ways to understand the data that lead us to this conclusion, and one can easily find people who will argue that Math skills are no worse in America than they are anywhere else. Let us, however, for the sake of argument, assume that the state of the nation's Math skills is as bad as we are led to be-



lieve. The pertinent question is whether or not the Culture of Assessment in Higher Education will do anything to mitigate the situation. As I have said, teachers of Mathematics have always assessed. We just did not use the term. Indeed, I cannot remember a time when we did not try to use our assessments to improve our teaching. To use another neologism, we have always attempted to “close the loop”. If we have gone through the process and yet we still stand accused of not doing our jobs well enough, perhaps this exposes the argument for curative assessment as an enthymeme that warrants rather deeper analysis than is, at present allowed.

Mitigation is certainly called for. I believe that we can teach better. But the Culture of Assessment, by its nature, by moving the focus away from students and discipline and by leaving space only for that which is assessable, it impedes that mitigation. In as much as high school graduates are arriving at college in need of remediation, this particular bicycle manufacturer is not able to work with the raw materials he once had at his disposal. I am not so arrogant as to blame high school education or the students themselves for this situation. The reasons need to be considered elsewhere. My contention, however, is that a government official who knows little about bicycles is the last person to recognise when the quality of my work is slipping, certainly the last person I need to inform me of what I already know, that I am not working with the materials I once had, and that imposition of standards from the outside only benefits Orville’s company.

#### References

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