First-Day Questions for the Learner-Centered Classroom

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“Do my students know why I ask them to learn this way?”

I said it aloud while reading the teaching evaluations from the previous semester. I had taken the plunge; I had moved substantially away from an almost entirely lecture-and-exam format in the second-semester geology course. Instead, many class sessions featured students working in small groups to apply content, which they first encountered largely through assigned reading, on to authentic geological problems.

Confronting a Problem

Each weekend, students completed an online assessment. Although low-stakes scores were provided for in-class and online assignments, these were primarily formative opportunities to guide both the students and me. Class sessions had been hugely more energetic and fun, at least for me. No dozing students, blank stares, and constant glances toward the clock. Students were doing things, and I was enjoying my interaction with them, guiding them when they were stuck and thrilled to contribute additional insights that they requested out of curiosity. My shorter presentations focused on topics that they were struggling with. Grades went up significantly.

So, why did these evaluations reveal so many signs of dissatisfaction? Why had my evaluation scores gone down while student achievement had gone up? The reason became clear as I read the written comments. The students were displeased with the greater work. They were content to ignore reading assignments, assuming that I would lecture over the content that was important. They were content not to review information and construct knowledge except by cramming the night before exams. However, in my class they needed to come to class prepared to do in-class assignments with their peers. Moreover, they had to be reviewing and applying what they had learned weekly for the online assessments. There were a few
comments about how much they had learned in the class, but for most students the cost seemed too high. Clearly, although I adopted what I was convinced was a more successful pedagogy for my students, the learners were so used to other approaches that they really did not know what I was doing and, more importantly, why I was doing it. Today, I realize that this is typical, but at the time, I did not know about resources (like Felder and Brent, 1996) to show me how to stay on track. What should I do?

**Getting Student Buy-In**

As the next offering of the course approached, I thought about what to do differently. Sure, I could make the workload more manageable—focus more on the learning outcomes by covering less content, assigning more succinct and purposeful reading, and giving clearer and shorter assignments and assessments to provide opportunity for reflection. However, was not the real problem that the students did not understand why I taught the course in this apparently unfamiliar style?

I planned to start the first day with a summary of the research on active and reflective learning. That would show them that I knew something about teaching and not just about geology and that they were really taking a “state of the art” course. Wouldn’t they then see that everything I was having them do was really for their own benefit as learners?

As I outlined what I would say and what graphs I would show, I could not help but think that I was really missing the point. What I was planning somehow brought back from childhood memory the admonition of my parents to eat my vegetables. Just because it was good for me didn’t make the food taste better; I still didn’t like to eat some things. Wouldn’t it be the same for the students? What I needed was a way to engage them to see that how I taught the course mattered to them; that learning this way helped them accomplish goals that were important to them.

**The First-Day Questions**

On that anxious August day, I greeted the students and after a minimum of predictable first day review of the syllabus, I projected this text on the screen:

> “Thinking of what you want to get out of your college education and this course, which of the following is most important to you?
> 1. Acquiring information (facts, principles, concepts)
> 2. Learning how to use information and knowledge in new situations
> 3. Developing lifelong learning skills.”

It was a gamble—I had no idea how they would respond. I encouraged them to chat with their neighbors. Then I polled them. Two hands went up in support of option number 1. Twenty-one hands rose in support of option number 2. The remaining 13 students selected the final option. We talked about each one, with advocates for each stating their case. The two students who favored acquisition of information revealed that it was not so much this option seemed most important but that it was most basic. They saw the list as hierarchical, and although they thought application of knowledge was more important than memorization, they felt that they had to master the factual information before they could use it. This led to further discussion of why learners needed to meet all three of these goals, even if we each held one as being more important than the other two.

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**Why had my evaluation scores gone down while student achievement had gone up?**
Editor's Note:

The last word in this, the first issue of the Forum for the fall semester, sounds the theme: being prepared. Preparation and being prepared, like everything else, means not just one thing, but many. In her AD REM column, Marilla Svinicki does what a number of authors in this issue do: she questions received wisdom and arrives at what may be better thinking. Does it always make sense for students to read the textbook before coming to lecture? Maybe not, Marilla says; maybe skimming it would be a better, then reading it later when lecture or the textbook before coming to lecture? Maybe not, Marilla says; maybe skimming it would be a better, then reading it later when lecture or class has framed the outlines of what’s most important.

Ed Nuhfer's DEVELOPER'S DIARY takes yet another view of being prepared. Ed homes in on the quality of preparation. Almost all faculty come to class prepared, as they understand preparation. They know their stuff; they've organized what they plan to say. It may be, though, that attending more aggressively to what we are discovering about how today's students learn matters just as much as "knowing your stuff." If student learning is the goal of teaching, and if, year after year, a faculty member attends to how students learn and shapes classroom instruction to make the most of how they learn, shouldn't that increased value find reflection in the pay check? If there's a disconnect between student ratings, student learning, and how the school looks at faculty performance, perhaps something's out of whack.

Michael Harris and Roxanne Cullen feel much the same as Ed Nuhfer on this point. All the emphasis on learner-centered classrooms seems exactly right, but it has implications for the college and university mission statements seldom realized on paper or in practice, they say. They suggest that the syllabus for a learner-centered course could and should offer a pattern for what the mission statement of a learner-centered institution ought to look like.

Given how many aspects of higher education have become mentally and socially entrenched, making even obvious improvements sometimes proves difficult. Even if mission statements changed to reflect an aggressively learner-centered campus and a "learning organization," what would it take to actually cause higher levels of student learning success? I ask this because very early in the life of the Forum, I interviewed a faculty member at a college in the east who had seen the light on student learning and made radical revisions in how he taught. Instead of straight lecture, he began using all kinds of group work, discussion, and problem-based approaches. His students hated it, and they hammered him when it came to student evaluations. Whether he was a master of the new approaches or not, he was on the way to improved teaching and greater student learning. Sadly, students' dissatisfaction counted more with his promotion and tenure than what he was trying to accomplish and so, dispirited, he fell back to fulfilling students' entrenched expectations, offering straight lectures and a few exams.

But what if students had been prepared in yet another way first? What if their entrenched expectations had been directly confronted and they'd been led to see that their ability to learn new material would actually be better served through other approaches? Since student satisfaction remains central whatever the mission statement and evaluation system, if student learning is truly important perhaps the first lesson needs to be about learning itself. That's the approach Gary Smith has begun taking and it seems to be working. Let students see how they expect to be taught and then show them the path of a better way. The better way is the path we all seek. Good luck on this semester's journey. — James Rhem

Now I had them where I wanted them. I projected a new question on the screen:

"All three of these goals are clearly important. However, let's think for a moment of how best to accomplish these goals. Learning is not a spectator sport—it takes work; that includes work in the classroom and work that you do outside of the classroom. So, of these three goals, which do you think you can make headway on outside of class by your own reading and studying, and which do you think would be best achieved in class working with your classmates and me?"

The polling was nearly unanimous that acquiring information was the easiest to do alone and that the other two goals seemed more complicated and would profit from peer and instructor influence. This, then, led to a discussion of how to pursue goals 2 and 3. These goals are not achieved by reading or listening to a lecturer—students must actively do things in order to learn. Students learn best (Davis, 1993) when they take an active role:

- When they discuss what they are reading
- When they practice what they are learning
- When they apply practices and ideas.

The need for active learning in class in order to reach their goals leads students to accept that they

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have to read and otherwise prepare before coming to class by making first contact with content on their own.

This discussion became a segue to explaining how the course was structured—that it was about their learning and achieving the goals that were most important to them. Rather than me lecturing over the assigned reading and leaving them
to fend for themselves on homework, they were going to come to class having read, and sometimes struggled with, the text. The problem-solving that would apply the reading content and develop logical hypothesis statements and testing would take place in class. By completing these assignments and the online assessments, they would always know whether they were mastering both the content knowledge and its application and relationship to how scientists know about the natural world. Moreover, I would be continually reviewing their progress, too, working with individuals where they showed lack of mastery and going back to material when most of the class showed evidence of confusion and misconception.

The Impact

The results that semester were dramatically different. Not only was the active classroom fostering better learning performance on exams and other assignments but also my teaching evaluations rose to their highest levels. Students actually complained if they thought I was lecturing too much. I have since used the first-day questions in every course I teach and at all levels for three years. The strategy has been shared with colleagues through faculty development workshops and I frequently hear back about their experiences. Some use classroom response systems (clickers) to maintain anonymity during polling. The results are very consistent: Students desire to accomplish the educational goals that come from deep learning. One question activity is important for getting student buy-in to why active-learning strategies are used, and to the partnership responsibilities of instructor and student. Without this introductory dialogue, the expectations of coming to class prepared, working with peers in class, and completing frequent assessments of learning may be foreign to students and seem like too much work compared to listening to lectures and regurgitating facts on exams. However, once students acknowledge the linkage between their goals and the implemented learning methods, they have a new appreciation for why learner-centered instructors do what they do and learners come to value these methods so long as they are used effectively and they can measure their own learning.

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References:
Building Cognitive Assemblies: An Exercise in Course Design

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Commonly, in hallway conversations across campus, one hears the lament that there is never enough time in the semester to present material with sufficient breadth of scope and depth of detail. How can we teach content and, at the same time, help students understand how our fields operate and how these fields are evolving? How do we incorporate new findings into a semester’s learning when we have already trimmed all of the “non-essentials”? To borrow the patois of the auto industry, we have what we regard as a “lean” production and a robust design, but now we need to introduce additional information without the luxury of increased class time.

Restructuring a course can be a painful process as it involves letting go of material formerly considered “absolutely essential” to allow room for new ideas or discussions. Thomas Kuhn’s 1962 book The Structure of Scientific Revolutions offers guidance for revision. Kuhn noted that when scientists who were wedded to the idea that the heavens moved in perfect circles around the earth found data that did not fit, they added epicycles (little circles) to help shoehorn the new data into their old belief system. Eventually, Copernicus offered a new paradigm for understanding astronomy by wresting the earth from the center of the universe. Similarly, as professors, we too must be willing to shift the organizational paradigms of our courses, rather than simply adding epicycles.

The first courses I taught bore a close resemblance to those I had taken as a student. Discussions with colleagues in seminars and around the coffee pot helped me sharpen and recast problematic lectures. Further research, along with student questions and suggestions, proved invaluable in filling the gaps in my lectures. As I continued to add information to my lectures, three things occurred: I began talking faster; new material crowded out student participation; and the structure of the lectures started to bend under the weight of the marginalia. With fields of study continuously evolving, these questions arise: how do we revise our course structure and where do we turn for guidance in this process?

A range of experiences, inside and outside of academia, both serendipitous and planned, has proved instrumental in helping me shift my teaching paradigms. Such encounters have underscored the value of developing new cognitive assemblies, reevaluating disciplinary boundaries, connecting with new audiences, and engaging multiple senses in the process of course revision.

Forming Cognitive Assemblies

Several site visits to manufacturing plants, many dinner table discussions with my automotive engineer husband, and a few monographs later, I came to realize that the automotive industry offers a valuable lesson for the educator: if you can reduce the number of parts or get one part to do several jobs, you reduce cost, time, and errors. Replacing a twenty-eight part metal assembly with a single plastic piece earns automotive workers considerable bonuses.

Similarly, in teaching, we can introduce cognitive assemblies of methods, questions, and content that link the diverse topics we wish to cover early in the course and weave them through the term’s lectures. The students develop a robust scaffolding to which they can affix the course material, and time is saved as the class can refer back to the cognitive assembly without a full reintroduction of earlier material. Several years ago, for example, I replaced my “History of Medicine” syllabus of 42 chronologically-arranged topics with a syllabus structured around five epidemics, each of which offers an entry point into studying the medical marketplace, theories, and practices of its era.

The strategy of building cognitive assemblies also proves effective at the micro-level. In my “United States Since 1877” survey, I drew together material from individual classes on imperialism, immigration, Native Americans, and African Americans to craft two lectures that examine late-nineteenth-century Americanization efforts at home and abroad. These new lectures are better focused than those they replaced, have less extraneous detail, evoke thoughtful comparative analysis from students, and allow additional time for post-World War II topics.

Challenging Traditional Structures and Boundaries

As automotive manufacturers periodically redesign vehicles, professors have an opportunity each semester to rearrange, rework, and challenge their courses’ components. Pondering, sometimes erasing, the boundaries within and between disciplines, and looking for new connections become integral to this process.

Asking my students to consider how we divide historical eras results in interesting discussions that help them consider the ways in which scholarly choices determine the narratives students learn. Universities divide the United States
surveys in one of two places: the end of the Civil War in 1865 or the end of Reconstruction in 1877. I open my United States survey by asking students to explore the different visions of American history produced by shifting the dividing line from 1865 to 1877. The first, I argue, offers a vision of Northern victory and freed slaves; the latter, a set of questions about the meaning of the Northern victory in light of the failures of Reconstruction.

Peering across the Civil War dividing line makes clearer the continuity of ideas that linked the nineteenth-century together.

Peering across the Civil War dividing line makes clearer the continuity of ideas that linked the nineteenth-century Seneca Falls women with the next generation of reformers dedicated both to women’s rights and social change. When these materials are presented together, the students achieve a more coherent understanding of the women’s movement. Similarly, in general education classes, I ask students what separates biochemistry from organic chemistry; social psychology from sociology; and economics from business. We then discuss the possibilities for creative scholarship that result from research that crosses disciplinary boundaries.

Teaching (and Learning from) Different Audiences

Automotive manufacturers pay close attention to the questions and concerns of consumers. In a like fashion, audience responses offer the professor guidance on whether or where a new approach to a topic is needed. When I played the Industrial Workers of the World (IWW) song “The Preacher and the Slave” for my history class, the students started singing along. Their words were not those in the IWW’s Little Red Songbook; rather, they were singing the hymn “In the Sweet By and By.” A discussion followed in which the class examined why an anti-Christian union would appropriate Christian hymns to convey its message. Two lessons emerged from this experience. First, examining the medium in which historical actors conveyed their messages gave students a productive means of gaining access to the worldview of these actors.

Second, shifting the background (in this case religion) to the foreground revealed powerful tropes for organizing a section of a course. Indeed, the language and hymns of nineteenth-century Protestantism permeate the writings and songs of labor unions, the temperance movement, public health initiatives, and imperialist ventures.

The boiling down, supplementing, and recasting inherent in tailoring college lectures for community audiences often makes clear new connections that I can bring back to my college students. The learning is a two-way street. Senior Scholars attending my lectures on Harry Truman and second graders discussing the history of polio shared personal stories and observations that I now use to illustrate my college lectures.

Engaging the Senses

Engaging the diverse senses in the learning process allows students with different learning styles to “test drive” and thereby better understand the subject matter. Much of historical inquiry, for example, seeks to recreate the choreography of the past: Who was on the stage? How close did they stand to one another? What roles did body language, spoken language, and clothing play in communication and ultimately in power dynamics?

National historical parks offer one means of understanding this historical choreography. Walking the grounds with re-enactors at Gettysburg in the July heat, for example, can make clearer in a multi-sensory way the overconfidence that led General Lee to order the futile attack now known as Pickett’s charge. Analysis of historical staging through primary source documents also provides an organizing platform for student discussions of the encounters between immigrants and native born; colonizers and colonized; doctors and patients. Similarly, studying the physical circumstances in which engineers design bridges, archaeologists work on a dig, or political leaders write treaties may elucidate how those involved drew conclusions and evaluated their results. Finally, a focus on the physical aspects of learning suggests a wide range of classroom exercises. When students pull insights out of the texts in classroom discussions, re-enact debates, or recreate scientific experiments, they become active learners.

As teachers we are always learning. When we integrate the most recent literature from our disciplines into our classes, we must also be open to allowing life experiences to shape and reshape our understanding of our subjects. Examining the construction, arrangement, and presentation of our courses’ components provides myriad opportunities for increasing our own understanding and drawing new connections. And, as our courses become more efficient, we can, perhaps, even sneak in a bit more material.

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Mission Statements Reconsidered

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The mission statement lies at the heart of effective planning, serving as a vehicle for realizing an institution’s vision, acting as a focal point guiding all its processes and practices. The first criterion of the North Central Accrediting body of the Higher Learning Commission highlights the value and importance of mission:

Criterion One: Mission and Integrity.
The organization operates with integrity to ensure the fulfillment of its mission through structures and processes that involve the board, administration, faculty, staff and students.

A meaningful and visionary mission statement should guide in planning, decision-making, resource allocation, and marketing. It can serve as a blueprint, a conceptual framework, a strategic direction. Yet, as one observer writes: “most mission statements are hollow and do not provide this guidance.” (Foley, 2007) As institutions continue their efforts to move toward a learning-centered focus, they must address the larger frameworks that guide institutions, among those, the mission statement.

Mission Statement as Syllabus

If we accept that an institution as a whole is learning-centered, as proclaimed by countless institutions across the country, then the learning-centered class may serve as a microcosm of the learning-centered university. In other words, a learning-centered institution should—on a large scale—reflect the qualities that we expect to find in a learning-centered class. In this scenario, the mission statement becomes the syllabus for the organization. There is much conventional wisdom available on the creation of a good mission statement, its function, appropriate language, length, etc. Conventional mission statements are to be brief in order that people within the organization can remember and recite the mission if asked. However, if individuals are reciting simple phrases that they do not understand in any deep way, the mission statement becomes simply a slogan, a bumper sticker for the organization, an example of the rote memorization that characterized the now outdated instructional paradigm. We would like to reconsider the mission statement in the context of the learning-centered syllabus, if only as an exercise for breaking through the instructional paradigm that has guided their creation in the past.

The learning-centered syllabus represents a philosophy of learning, an attitude toward students, and a conceptualization of how goals will be achieved. Further, it clarifies the roles and responsibilities of students and professor and clarifies how the achievement of outcomes will be evaluated. The learning-centered syllabus is a reference tool, a source of supplemental information. Following this pattern, a learning-centered mission statement will look very different from the conventional 100-word mission statement. This new mission statement will articulate a philosophy of learning, not restricted to student learning, but learning throughout the organization by all members of the organization, in other words, a learning organization. The learning organization, as Peter Senge declares in The Fifth Discipline: The Art and Practice of the Learning Organization, is one where the people in the organization are active participants as opposed to powerless reactors. Interestingly, the leaders of learning organizations are described as designers or stewards, the same terminology often used to describe the role of the teacher in the learning-centered classroom.

Mission and Community

Establishing a sense of community is a key feature of the learning-centered syllabus. Collaboration, teamwork, learning from one another are expectations in this paradigm because learning theory has shown us that learning is social and people learn through their interactions with each other and from each other.

In establishing a sense of community, the roles and responsibilities of the participants must be clearly defined. On an institutional level, this would call for an examination across and within divisions in order to show relationships of part to the whole and how all relate to a focus on learning. One of the key elements of the learning-centered classroom is the abdication of complete control on the part of the professor. Shared governance is a traditional concept in institutions of higher learning. In what ways does the institution go beyond this traditional concept of shared power and control? Is there shared governance beyond the curriculum? Does shared governance extend to all participants, including students?

Ongoing assessment and evaluation are key to achieving a learning-centered paradigm shift. Accrediting bodies are demanding evidence of student learning outcomes and colleges and universities must comply. Frost and Teodorescu (2001) offered an innovative recommendation regarding the assessment of institutional support for learning. They suggested that if we accept the premise that faculty
teaching portfolios are recommended means of documenting the many and effective ways professors support students’ efforts to learn and grow, then administrators should assess themselves in kind by preparing portfolios to demonstrate the ways in which they, in their department, college, or division, supported faculty efforts with students. This concept is an excellent example of applying the concepts of the learning-centered paradigm to processes outside of the classroom.

In assessing our processes we must also ask what other forms of assessment are in place and how is continuous feedback used to improve the entire institution. The focus on learning must be considered in all processes including recruitment, hiring, orientation, evaluation, and professional development of faculty and staff. Is formative assessment built into hiring practices? Is formative assessment built into student, faculty, and staff recruitment?

The learning-centered syllabus is a reference tool that often provides additional information or supplemental material. It acts as a true guide that students return to and reference throughout the course. What materials might be included (linked via the web) to the institutional mission statement in order to serve that function? How transparent is the institution willing to be in regard to furnishing data to outsiders, potential students, and parents?

If one were to transform the institutional mission to meet these criteria, the finished product would be considerably different from the mission statements that are currently in place at most institutions. It would most certainly not be a short statement that could be easily memorized. A truly comprehensive document that also serves as a resource would be a thoughtful, reflective document that members of the community would study and return to as they approached new projects and developed and implemented new policy and procedures. It would be a living document that would evolve over time with input from all parties.

**Mission and Integrity**

Whether or not mission statements should look like learning-centered syllabi remains an open question. However, if institutions are going to transform themselves, mission statements must be reconsidered. The true shift to the learning-centered paradigm requires a new vision for all participants in the institution, a fundamental, core change in values, attitudes, and practices. At the heart of that transformation must be a statement of mission, a statement of mission that reflects and manifests that change because mission is an indicator of the leadership’s commitment. The statement sends both a strong internal and external message. Currently much of the push for a learning-centered focus is coming from outside forces and some institutions more than others are experiencing resistance to the movement. A commitment to the push toward learning centeredness in a strong and innovative mission statement would provide an indication of a commitment as well as a true understanding of the challenge. In the words of the Higher Learning Commission, it would unite mission with integrity.}

**References**


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**Submissions**

The Forum encourages submissions on any aspect of college teaching and learning. The ideal article falls within a 1500 word limit and, following Thomas Sprat’s praise of the Royal Society, holds to a style of writing that reflects a “close, naked, natural way of speaking.”

Normally, articles come from faculty, but other voices, including student voices, are welcome.

Also, the symbiosis between our printed edition and our web site creates rich opportunities for posting ancillary materials to accompany submissions.

Submit manuscripts to James Rhem at 2203 Regent Street, Suite B, Madison, WI 53726 or via e-mail at jrcsley@ferris.edu
Are You Organized and Prepared?

Why Experienced Professors With Good Answers to this Question Deserve Higher Pay — Educating in Fractal Patterns XXV

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Play? Did that get your attention? Some colleges that emphasize good teaching do increase pay for higher student ratings, but it is rare for an institution to connect rewards by using evidence of improved student learning as a component of the annual review. We are going to concentrate on the student achievement aspect in this Diary, and look at one way we could encourage teachers in their efforts to promote learning.

Two philosophical mindsets that are polar opposites can each limit becoming more proactive in improving learning through better assessments. One is an overt obsession with student ratings—succinctly stated: “The student is our customer, and we are here to please the customers.” This popular business perspective is inappropriate wherever based on the assumption that schools supply a product for which students pay. The problem is that educational institutions, unlike businesses, supply a product for which the “customers” have a substantial responsibility to work and achieve before they can leave with it. Students have obligations and responsibilities that ordinary customers do not have. The opposite extreme mindset ignores the importance of student fulfillment and satisfaction altogether by defining academic success exclusively through tests and grades derived from tests. Because what we are really attempting to understand in both cases is the quality of fractal neural networks built during the acquisition of expertise (i.e., “learning”), single measures/tools (ratings surveys on one hand and pen and paper tests on the other) are insufficient to provide the understanding needed. Both approaches violate what the fractal model would define as acceptable practice.

The largest body of research in higher education concerns student ratings (often described as “student perceptions of teaching” or “student satisfaction ratings”). Although course, but we have to be careful about which items we use. Many forms that served the classrooms of the 20th Century employed student ratings items to deduce the dimension of “Teacher’s Preparation and Organization of the Course.” Examples listed in Feldman (2007) include

— the teacher was well prepared for each day’s lecture
— the presentation of the material is well organized
— the overall development of the course had good continuity
— the instructor planned the activities of each class period in detail.

Such items are more suitable for evaluating teaching in instructor-centered lecture classes than for evaluating teaching used within learner-centered classes that employ alternative pedagogies such as cooperative learning. Established forms, if used as the basis for review/rewards, can actually steer faculty toward lecturing and away from the use of interactive engagements that would enhance student learning.

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Two philosophical mindsets that are polar opposites can each limit becoming more proactive in improving learning through better assessments. One is an overt obsession with student ratings—succinctly stated: “The student is our customer, and we are here to please the customers.” This popular business perspective is inappropriate wherever based on the assumption that schools supply a product for which students pay. The problem is that educational institutions, unlike businesses, supply a product for which the “customers” have a substantial responsibility to work and achieve before they can leave with it. Students have obligations and responsibilities that ordinary customers do not have. The opposite extreme mindset ignores the importance of student fulfillment and satisfaction altogether by defining academic success exclusively through tests and grades derived from tests. Because what we are really attempting to understand in both cases is the quality of fractal neural networks built during the acquisition of expertise (i.e., “learning”), single measures/tools (ratings surveys on one hand and pen and paper tests on the other) are insufficient to provide the understanding needed. Both approaches violate what the fractal model would define as acceptable practice.

The largest body of research in higher education concerns student ratings (often described as “student perceptions of teaching” or “student satisfaction ratings”). Although course, but we have to be careful about which items we use. Many forms that served the classrooms of the 20th Century employed student ratings items to deduce the dimension of “Teacher’s Preparation and Organization of the Course.” Examples listed in Feldman (2007) include

— the teacher was well prepared for each day’s lecture
— the presentation of the material is well organized
— the overall development of the course had good continuity
— the instructor planned the activities of each class period in detail.

Such items are more suitable for evaluating teaching in instructor-centered lecture classes than for evaluating teaching used within learner-centered classes that employ alternative pedagogies such as cooperative learning. Established forms, if used as the basis for review/rewards, can actually steer faculty toward lecturing and away from the use of interactive engagements that would enhance student learning.

Play? Did that get your attention?

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test proposed items. Some of the four items above fail Berk’s criteria. Here, we add two more criteria to Berk’s twenty that will help produce better items on future rating forms: (A) items should be pedagogically independent and not advantage any instructor who uses either conventional lecture or an alternative practice, and (B) items should describe a trait or practice that can be supported and developed. We can write items to deduce this dimension in a student-centered way such as:

1. I understood the learning outcomes expected from this course.
2. To me, the course content seemed well organized.
3. To me, class sessions seemed well organized.

Rank order of dimensions deduced as most important to student satisfaction doesn’t prove identical with practices that produce student achievement (Feldman, 1998); but there is sufficient overlap to make it easy to modify classroom approaches to increase both satisfaction and learning by enacting practices that attend to important dimensions. Direct measures used in combination can give us the understanding that single measures cannot. These include: (1) surveying students through knowledge surveys (Nuhfer and Knipp, 2003) about the detail of their learning, just as regularly as (2) surveying students about their summative satisfaction with courses and professors. In addition, multiple measures should include (3) using formative surveys to identify the specific pedagogical practices that occur in class that map to the most important instructional dimensions with proven correlations to student learning, and (4) including tests and grades as one measure. Here, we stress that a fractal thinker will always remain aware that none of these four measures can be sufficient in itself.

**Deducing Good Preparation & Organization**

What instructors think constitutes good preparation (“knowledge of subject”) usually differs from what the research indicates would be a more promising way to prepare lessons. Professors often strive to improve preparation by increasing their own depth in the subjects taught, and even by doing cutting-edge disciplinary research, assuming that this professional growth will improve their classroom success. More detailed handouts, online posting of more sophisticated PowerPoint files, and even distribution of the professor’s personal course notes are generally products of such self-development efforts. Unfortunately, that kind of preparation seldom improves the professor’s ratings. Worse, it doesn’t promote students’ understanding of content, because it doesn’t result in the students doing anything differently.

Over many years, the most common error I see faculty making while trying to improve their student ratings is to focus on context rather than upon lesson design.

**Preparation & Organization from a Fractal Thinker’s View**

The most simplistic view of organization is the presentation of required readings and topics in a calendar format in a syllabus, with the assumption that covering the topic on the exact date described constitutes good organization. The danger of such organization lies in delivering content without awareness of the pace and needed experiences that make deep learning achievable. From the fractal perspective, that perception of organization is acceptable only from a professor who has never previously taught the course.

When we introduced the six components of the fractal generator (NTLF V12 N2 & N4), we noted that proper use of pedagogy calls for a match between pedagogy and content. Further, we noted that intellectual development occurs only when lesson design employs content in ways that challenge students to move beyond their present stages and into the next higher stages of thinking (stages as outlined in the Perry model or related models). Eliciting that growth requires one to (a) understand the current intellectual development and needs of one’s students, (b) design lessons that use interactive engagements, (c) use rubrics as a way to assess learning, and (d) design meta-cognitive experiences that will promote student reflection and self-assessment.

Good “organization and preparation,” from the fractal viewpoint, calls for more than simply a calendar of events and preparing well-organized lectures. We should probably not expect a first-year teacher struggling to draw together the content to produce such a course. With high teaching loads and time in short supply, preparing a lecture is efficient and may be the learning experience that a new faculty member most needs. Preparing lectures does enhance the teacher’s content mastery, and well-organized lectures can be put together in a few hours.

By a second teaching of the course, professors have mastered the content of what they want to teach sufficiently to make possible production of a good knowledge survey. Knowledge surveys enable users to target particular content that can generate deeper learning through designed experiences than through a lecture. At this stage...
(teaching the course a second time), some sophisticated lesson design should begin, probably with the help of a faculty developer or accomplished mentor.

Lesson designs for deep learning require planning, time, and creative imagination. One cannot produce such a design the night before the topic is scheduled for class delivery. The learning experiences employed in such design go beyond simple interactive engagements like “think-pair-share” that can be created spontaneously during class. To improve courses with deep learning design exercises, one must clearly identify the challenge with enough lead-time (several weeks) in order to produce one good creative design at a time and deliver it on schedule. Otherwise, one will find oneself upon the topic the night before and consigned to lecture on it.

The knowledge survey is the planning tool that enables the preparation of a better learning design by advanced planning and timely delivery. The tool also gives all who design and manage courses an unprecedented way to track the effects after changes occur (NTLF V15 N6) and to maintain data that allow longitudinal studies of their own classes.

Once designed, these experiences produce deeper learning for students and remain available for as long as the content remains relevant. A course made gradually stronger in this way becomes increasingly easier to enact. Time invested on the front end in preparation usually pays handsomely in time freed later. Such courses cannot result from weekend “course design/redesign” workshps. They are the products of evolving personal growth, not merely a static course design plan. A person can only develop such sophisticated courses, one lesson design at a time, over a period of years.

**A Proposal for an Alternative Evaluation to Encourage Student Learning**

Students who complete end of term ratings often feel their voices are not heard. Indeed, when the ratings themselves become the evaluation, little does change. Professors worry about ratings and start to feel, with some vindication, that ratings begin to place students in the role of determining what is appropriate content and instruction.

However, what if we replaced the importance of the numerical student satisfaction rating as the primary basis for rank, tenure, and promotion decisions, and instead based review decisions upon regularly DOING something assessable to improve learning? Student learning and professors’ working conditions will likely be advanced more by an annual review process that gives more weight to creating one new deep learning experience design per course than it gives to the satisfaction ratings score from that course. Wherever individual full professors teach courses in the same or similar ways they taught when assistant professors, they perhaps should not be paid much more than assistant professors. However, blame for general institutional lack of change in performance or methods lies at the feet of those who prop up review and reward processes that fail to encourage the required DOING.

If a professor produces one new interactive engagement exercise each time a course is taught, by the time a professor rises from new assistant to full professor, every course taught by the full professor should be incomparably stronger as a learning experience to the course version the professor began with. It is fully justifiable to pay more to those who spend their professional lives building their courses into ever stronger learning experiences.

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A Scout’s Motto: Be Prepared

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I was a Girl Scout for many years so I heard this phrase fairly often. I never asked, “What does that mean?” I still don’t know what the official meaning is, but I bring it up because something very similar happens in our classes. We tell our students to be prepared for class, and assume they know what that means. So let me ask you. What does that mean in your class?

In my undergraduate course, I used to think that preparing for class meant reading the textbook beforehand. As a psychologist I knew that having an “advance organizer” prior to receiving new information facilitates the learner’s ability to recognize and understand what is important. However, many students said that it was better for them to read the textbook after class. At first I attributed this to laziness; why read it when the teacher is going to tell you all about it? But it wasn’t just the weaker students saying this; it came from the better students, too.

So I put aside my prejudices, put on my psychologist’s hat, and reanalyzed the situation. Why wouldn’t having an advance organizer like the textbook provide the preparation for class that it should? The answer is simple. The textbook is NOT an advance organizer; it is a detailed source of original information.

Advance organizers are broad structural supports that give the learners an organization on which to hang the details of the content. A skeletal outline is an advance organizer. A graphic, like a flow chart or Venn diagram, that illustrates the inter-relationship of the main points is another one. The problem with thinking about the textbook as an advance organizer is that although most textbooks have lots of structural support like bold face headings and visuals, they also provide a lot of new information, and it is often difficult for the learners, who are novices in the area, to pay attention only to the structure.

So the students were probably accurate when they said it helped to come to class before reading. My class periods tend to be well organized with lots of structural supports and activities to check on understanding. One thing that I do well is make class organized. In reality my class serves as an advance organizer for the fact-laden reading assignments.

Does that mean that the students don’t have to prepare for class? No, I’ve just changed what preparing means. I’m suggesting that, rather than reading the whole assignment, students skim it and create a mini-organizer of their own. The textbook provides a lot of structural cues, so I suggest the students take a pass through the reading, noting those cues. What are the headings? What are the figures and charts about? What cues to the content does the author provide? Students will then come to class prepared with a mini-organizer to help them make the connection between the readings and what happens in class. The class provides the main organization. Finally they go back and see the points of connection between the main points made in class and in the textbook.

Will all the students do it? Of course not. But I can make it their first assignment to show what a difference it could make in understanding both the class and the textbook. In this way I’m making the meaning of “be prepared” explicit, and that can only help.

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