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A Liberal Education Scorecard

The scorecard provides a format to guide, assess, and document the development of student learning

THE UNIVERSITY of Wisconsin–Eau Claire is currently conducting an institutional self-study as part of the reaccreditation process, and we both have been heavily involved in reflecting on what we do, on how we do it, and on our structures for ensuring the best quality of both. For us, this deliberate reflection has brought a moment of clarity that has changed how we view ourselves as educators: we have come to realize the truly great disconnect between what we teach and what we want our students to learn. While the details of our story are specific to us as individuals, the lessons we have learned surely are not.

We are both computer scientists, and we consider ourselves to be dedicated educators. We work hard to modernize our courses and improve our pedagogy. For nearly twenty years each, we have kept diligently abreast of the most recent developments in our field, integrated these developments with the fundamental principles of our discipline, and worked to develop intentional pedagogical practices for teaching our students the resulting content. While we believe this content is necessary for our students as computer scientists, we now understand it is not sufficient for them as citizens or lifelong learners. In fact, when considered within the broader context of their lives after college, the computer science content we teach is the *least important* thing we want our students to learn.

Even our most successful graduates will founder within a few months after graduation unless they continue to learn and relate what they know and do to the world around them. Without the transferable knowledge, skills, and attitudes that characterize a liberally educated person, all the discipline-specific content knowledge we impart today will be insufficient for tomorrow. Unfortunately, we have left it to our students' own initiative and abilities to extract these more important elements of their education from the explicit discussion of the less important discipline-specific content. We must do better.

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On being a liberal educator

How can we help our students understand and embrace the most important outcomes of a liberal education? This, we believe, is our *primary mission* as educators, and we think the answer must start with us—all of us. We must first create a mindset that is truly student-centered, one that supports student learning through a cohesive and integrated mosaic of curricular and cocurricular experiences united in common purpose by the fundamental goal of transforming students into liberally educated, global citizens. As faculty and staff members committed to the purposes of higher education, we must move away from protecting and defending our specialized areas of expertise, whether in academic disciplines or in cocurricular areas. We must all become liberal educators who hold our students and ourselves accountable for the desired outcomes of a liberal education.

We understand how discipline-specific (major) curricula are designed and how those designs are influenced by the system of curricular rules enforced by an institution. We understand the desire to create efficient pathways within the curriculum that enable students to navigate through those rules and meet general

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university requirements as a natural consequence of taking courses in their majors. But we now also understand that focusing too narrowly on our own discipline and our "turf" has worked against the purposes of a liberal education. To make this point more clearly, we admit that we have found ourselves on occasion proposing and supporting ideas that may have been good for us as disciplinary specialists and that have made our lives in academe easier, but that do not serve students well for the future. Again, we must do better.

Relevance to general education

Like general education programs at many colleges and universities across the nation, the program on our campus is the product of over a decade of incremental revisions and extensions. And while not all of our colleagues will agree, we believe the result is a complex labyrinth of curricular requirements that is frustrating and confusing to faculty and students alike, and that is only marginally based upon a clear philosophy of what general education should mean or how it should support liberal education. In fact, students no longer view our general education program as the core, or foundation, of a liberal education that will empower them with the knowledge, skills, and values for personal enrichment, lifelong learning, civic engagement, and social responsibility. Instead, they view general education as a disconnected set of requirements to meet, or obstacles to remove, so that they can "get to what matters."

In a recent survey, first-semester students enrolled in first-year-experience courses on our campus were provided with five descriptions and asked to identify the one that best describes the purpose of a liberal education. Despite the fact that one of the explicit goals of the first-year-experience courses is to introduce students to the purpose of a liberal education, only 24 percent identified the correct definition: "a philosophy of education that empowers individuals with broad knowledge and transferable skills, a strong sense of values, ethics, and civic engagement." The majority of students (62 percent) selected "an integrated collection of courses that includes philosophy, history, literature, music, art, and science."

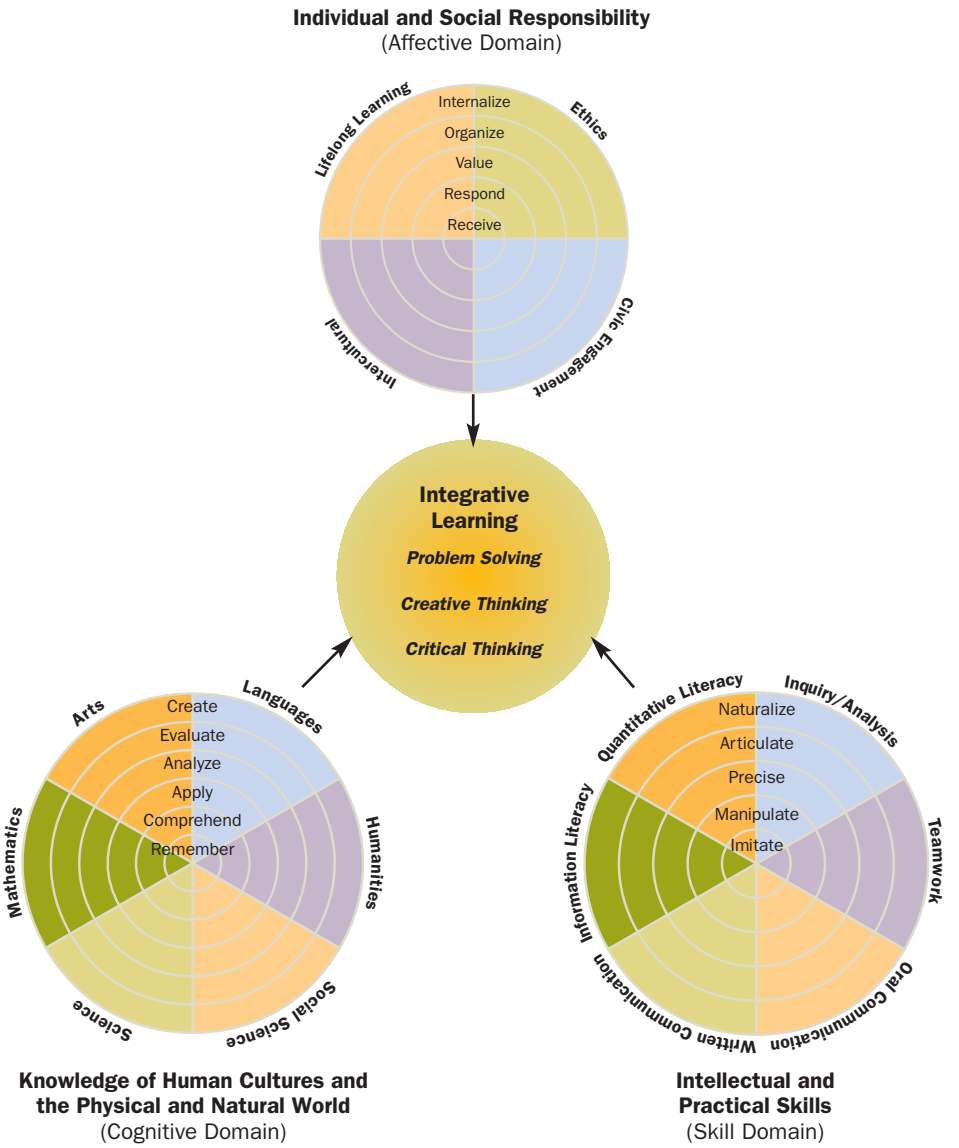
The survey revealed that, as we have feared for a number of years, our students equate liberal education with a collection of specific disciplines rather than viewing it as the intellectual foundation of their entire undergraduate experience and their lifelong learning. How can it be that first-semester students enrolled in special courses that explicitly target liberal education principles can so quickly "learn" to equate a liberal education with a distributive collection of courses in the arts and sciences? For faculty and staff at colleges and universities like ours, the answer is simple: our actions speak louder than our words.

Our general education program has grown into a potpourri of over four hundred courses, each satisfying one or more specific graduation requirements. Students are quick to recognize and seek out individual courses that satisfy multiple requirements—the two-fers and three-fers, or even the elusive four-fer—as the most effective means for "satisfying GE." Moreover, students are not the only ones who try to kill two birds with one stone. Faculty members often spend their student advising time discussing the major requirements, while marginalizing the general education core. They recommend, for example, that a student "take this course to get both the X and Y requirements out of the way." The result is a student body that views the discipline-specific major as the heart, or main purpose, of the educational experience and that views general education and liberal education as the "stuff to get out of the way" via the path of least resistance.

The liberal education scorecard

To guide our own evolution and development from disciplinary experts focused on improving our teaching in computer science to liberal educators focused on improving student learning on a broader level, we have developed a visual tool that supports both intentionality and accountability in the design of a student-centered program of study (see fig. 1). The tool—which we call the "liberal education scorecard," or just "scorecard" for short—can be used to help an individual instructor, a department or program, or even an entire institution maintain focus on the learning outcomes of a liberal education. The scorecard is not specific to any particular discipline or to any particular curricular model. It does not attempt to describe *how* an instructor (or department or institution) delivers a liberal education, but rather it provides a format to guide, assess, and document the development of student learning.

Figure 1 **Liberal Education Scorecard**



The scorecard overlays the three dimensions of Bloom's taxonomy of understanding (Bloom 1956) onto the essential student learning outcomes identified in *College Learning for the New Global Century*, the 2007 report from the Liberal Education and America's Promise (LEAP) initiative of the Association of American Colleges and Universities. The LEAP report describes the essential goals, learning outcomes, and guiding principles of a twenty-first-century college education. To be fully accurate, we have modified both the taxonomy and the LEAP outcomes in three important ways. First, the levels of understanding associated with the skill (or psychomotor) domain are based not on the work of Bloom but, instead, on the subsequent work of Dave (1970), whose version is more relevant for skill development related to work and life. Second, following Anderson and Krathwohl's revision of Bloom's original taxonomy (2001), the two highest levels of behavior in the cognitive domain are "evaluate" and "create," rather than "synthesize" and "evaluate." However, we retain the labeling of the second level of understanding, using "comprehend" rather than "understand."

Figure 2a **Sample Liberal Education Scorecard: "Great Books" Emphasis**

And third, the LEAP skills of critical thinking, creative thinking, and problem solving are represented as the core of integrative learning, which draws from all of the learning outcomes in each of the three domains.

In the scorecard model, the concentric circles within each domain expand outward from the most basic level of understanding at the center to the most advanced level of understanding at the perimeter. Ideally, we would like every student to achieve the highest possible level of understanding in each dimension for all three domains, but such a goal is much too ambitious for a single baccalaureate program of study. In fact, expecting students to reach the highest level of understanding (the perimeter) in each dimension and in each domain would probably spread resources too thinly and fail to do justice to any dimension or domain. Instead, instructors, programs, or institutions should intentionally reflect on their core values and their mission in order to determine the level of expected attainment in each dimension and domain that is most appropriate and realistic for their particular students. It should come as no surprise that the levels of attainment might

Figure 2b **Sample Liberal Education Scorecard: "Scientific Reasoning" Emphasis**

differ from one dimension to another; different instructors and programs and institutions surely will emphasize different components of a liberal education, and at different levels, based on their varied roles and missions. This is entirely appropriate.

As a specific example, the scorecard shown in figure 2a might represent the desired level of educational achievement expected of all graduates of a program that emphasizes the "great books" approach, whereas the scorecard in Figure 2b might represent the achievement expected in a program that emphasizes "scientific reasoning." Such a scorecard can represent any type of educational program—general education programs, major programs, minor programs, cocurricular programs, and so forth. In fact, it shouldn't be difficult to visualize the scorecard for a forensics team or even a volleyball team. The granularity with which each dimension is further subdivided into subdimensions corresponding to various program-specific goals or outcomes can be varied to meet the needs of the analysis. (For the sake of simplicity, however, most of our figures assume no subdimensions.) The point is that the scorecard provides a way

to be intentional about the desired liberal education outcomes, the level at which students are expected to achieve them, and the granularity at which we wish to measure them.

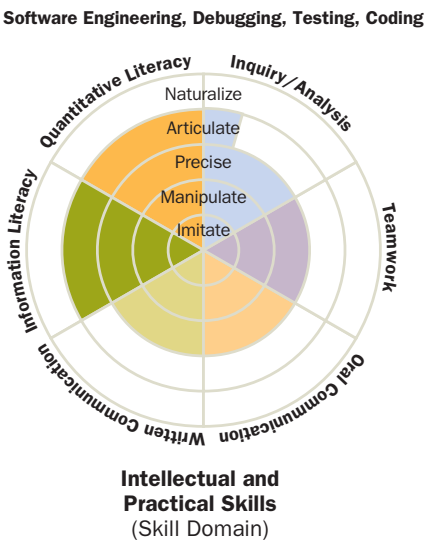
If the scorecards created for each curricular and cocurricular program at an institution are overlaid, the resulting composite scorecard presents a picture of the core values and mission of the institution. Imagine the insight to be gained from comparing this "living mission" to the official mission stated in the institution's formal documents. Further, the areas of such a composite scorecard that appear in each academic program essentially constitute the general education program, since they represent the common knowledge and skills that all students are expected to learn or experience. This emergent approach to defining a general education program can help an institution better articulate its core learning principles, and it can do so while avoiding the tendency to focus on disciplinary specialties and academic "turf."

In addition, the scorecard can be used visually to compare the difference between the *desired* outcomes of an educational program and the levels at which those outcomes are actually *demonstrated* by students. To highlight areas for improvement (or celebration), an institution need only overlay the scorecard representing the learning actually demonstrated by students onto the scorecard representing the desired learning outcomes. That is, the scorecard can be used as a student learning assessment tool. Over the last fifty years, educators have made considerable strides in developing assessment instruments that target the various levels of Bloom's taxonomy (Bloom, Hastings, and Madaus 1971; Phye 1997). While much of this work involves high school content, the material also can be extended to the university level. The scorecard's explicit use of Bloom's levels of understanding can provide focus and guidance in leveraging this body of work to assess student learning.

The liberal education scorecard applied

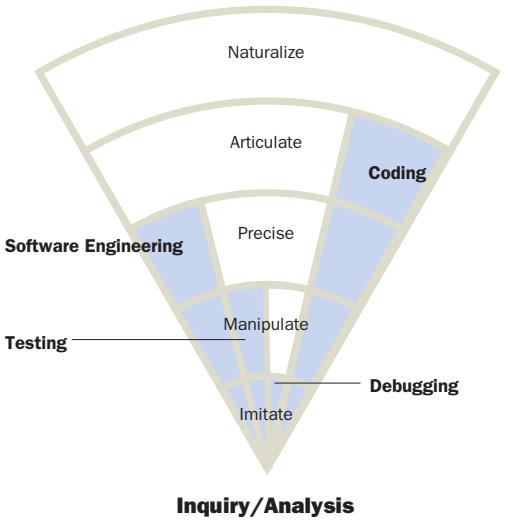
At the beginning of this article, we shared a personal revelation pertaining to our own shortcomings as liberal educators. Here, we discuss the use of the scorecard to better understand these shortcomings and to inform our plans for self-improvement. For the sake of brevity, we consider only the intellectual and practical skills domain of the scorecard, and in particular, only the intellectual and practical skills associated with the development of a software system—the hallmark of our computer science program. As figure 3 shows, we expect graduates from our computer science program to reach the "articulate" level of understanding in the quantitative literacy and information literacy dimensions (relative to software development); the "precise" level of understanding in the written communication, oral communication, and teamwork dimensions; and because of our use of subdimensions, the "articulate" and the "precise" levels of understanding within the inquiry and analysis dimension.

Figure 3 **Desired Intellectual and Practical Skills for Software Development**



Using Dave's terminology (1970), in the inquiry and analysis dimension we expect our students to be able to adapt and integrate their coding expertise to satisfy nonstandard objectives (the "articulate" level of understanding) and to be able to execute software engineering, testing, and debugging reliably and independent of help (the "precise" level of understanding). Of course, these represent *desired* outcomes. Figure 4 presents an expanded view of the inquiry and analysis dimension of the *demonstrated* scorecard that corresponds to what our assessment measures indicate students actually learn in these four areas.

Figure 4 **Demonstrated Intellectual and Practical Skills for Software Development**



For two of the four topical areas, we found that student learning was below the desired outcome in that subdimension. This begs the question, whose fault is it that the students fail to obtain the desired level of understanding? In inspecting our curriculum, we found that our program is designed to educate students at the "imitate" level in debugging and the "manipulate" level in testing, nothing more. This suggests the need for a third scorecard, an *enabling* scorecard, to document the level at which we actually provide experiences that enable our students to achieve the desired outcomes in each dimension. In the end, we have what we desire for our students to learn (the desired scorecard), what we actually have our students experience (the enabling scorecard), and what our students really learn (the demonstrated scorecard). Sadly, in our program, we have a mismatch across all three. Alas, the scorecards confirm what we have already admitted: as liberal educators, we must do better.

As a result of this analysis, we are now modifying our computer science curriculum specifically to include instructional experiences at the appropriate level for each subdimension, and more generally to include an explicit discussion of, and emphasis on, the liberal education outcomes that are supported by this discipline-specific outcome.

Conclusion

There are several important benefits to using the liberal education scorecard. Foremost is that it keeps our attention as educators on the primary objectives: effective student learning based on liberal education principles, and an intentional approach to assessing the effect of our efforts. In fact, we have come to understand the purposes of the reaccreditation process much more clearly as a result of developing the scorecard. We now see that it is not about compliance or "passing a test" but rather about being reflective and intentional about our purpose and seeking to measure our effectiveness.

We hope that by admitting our own shortcomings as liberal educators and by sharing our growth experience and the resulting scorecard model, we will encourage others to find the motivation and humility to reflect on their own maturation as liberal educators. As William Faulkner said, "do not bother just to be better than your contemporaries or predecessors. Try to be better than yourself." □

To respond to this article, e-mail liberaled@aacu.org, with the authors' names on the subject line.

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