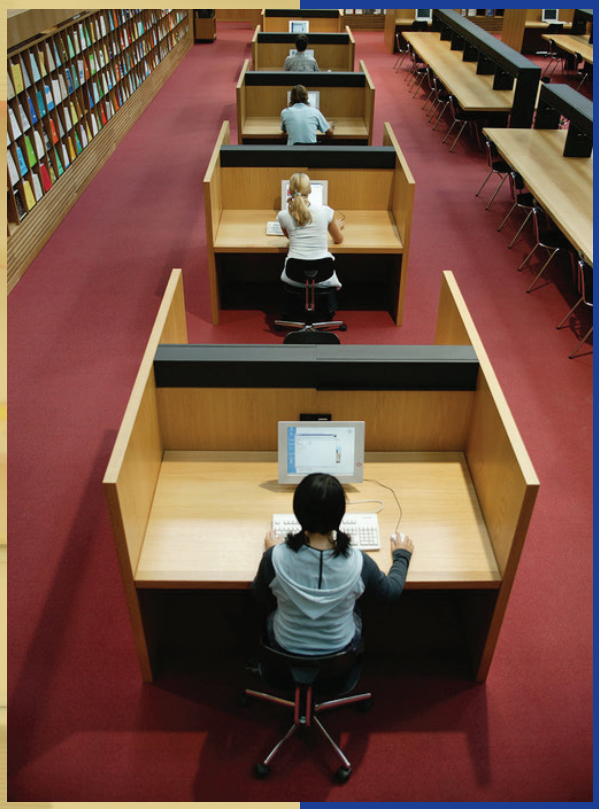

Student Learning as Academic Currency

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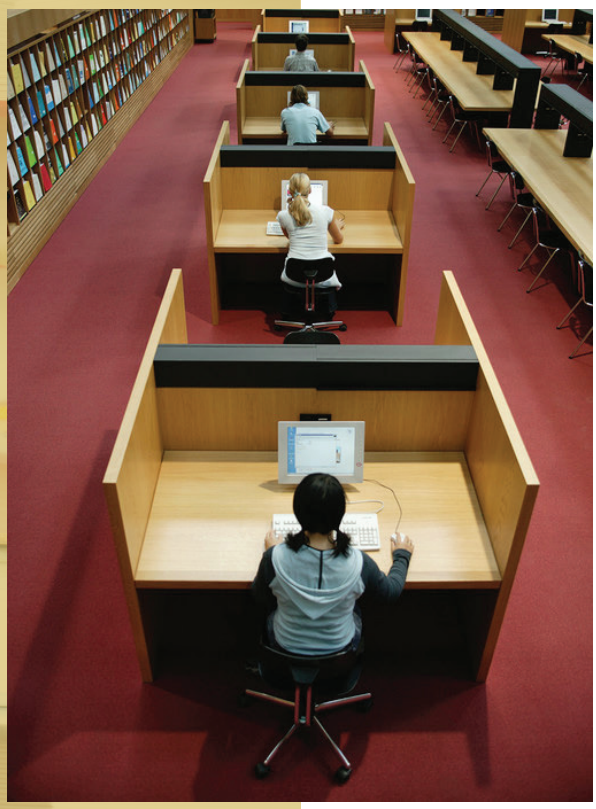

Student Learning as Academic Currency

By Sally M. Johnstone, Peter Ewell, and Karen Paulson

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Foreword

In 2002, the American Council on Education (ACE) published *Student Learning as Academic Currency* as part of an essay series titled *Distributed Education: Challenges, Choices, and a New Environment.* Our partner in this endeavor was EDUCAUSE. We received support from AT&T Foundation, Accenture, and Hewlett Packard.

ACE has reissued this essay because we believe it makes a useful contribution to current debates about student mobility, accountability, and learning outcomes. Authors Peter Ewell, Sally Johnstone, and Karen Paulson were ahead of their time in recognizing the limitations of our traditional seat-time credit system in a world transformed by the Internet. In the essay, they describe a possible new system of academic accounting based on the demonstration of competency, and discuss the implications of such a system for institutions, states, the federal government, and accreditors.

Two developments make this essay even more compelling today than it was in 2002: the proliferation of online courses across the higher education landscape and the intensified focus of accreditors, policy makers, and many others on identifying and measuring student learning outcomes. If education can and does happen "anytime, anywhere" and what matters is not time on task but rather student learning, the moment is right to revisit Ewell, Johnstone, and Paulson's vision of a new system based on demonstrated learning.

We welcome your comments on this essay, and suggestions for future topics that ACE might address.

Molly Corbett Broad
President
American Council on Education

Introduction

The notion of "academic currency," like its monetary root, is based on a set of socially recognized equivalencies. In commerce, specific equivalencies among monetary units govern purchases and sales in a marketplace. Academic currency, in turn, denominates different levels of student academic attainment—essentially what a given student's education is "worth." At present, the most widely accepted version of academic currency is the student credit hour. Awarding a student a degree essentially involves ensuring that he or she has satisfactorily completed a series of required and elected courses that amount to fixed periods of time on task, accounted for in terms of a given number of credit hours. To ensure the quality of the degree, faculty from the awarding institution work together to be sure the topics of each of these courses fit into a coherent framework that leads to the learning objectives that the institution has established for its graduates. Finally, a regional accreditor is charged with publicly certifying that all this has taken place.

Distributed education challenges this traditional definition of a college degree. Even traditional, on-campus students now choose online classes that fit their schedules and preferences, regardless of whether the course is offered by the campus from which they expect to earn a degree. Often, these courses do not conform to traditional notions of "seat time" as a measure of student effort and learning. This new world of asynchronous, self-paced, distributed education calls into question the current academic accounting system and requires institutional leaders, accreditors, and government regulatory bodies to envision new ways to measure student learning.

To see how we arrived at this point, we will begin with a short background on the use of grades and credit hours in American postsecondary education. We will point out some of the current limitations of seat-time and grades. We then offer a glimpse of what a different system—one based on student learning—might look like. This is followed by a short overview of competencies and assessments—the basic building blocks of such a system. Finally, we will point out some implications for institutional, state, federal, and accreditation policies using questions that might guide transformation.

The changes we suggest are significant and would create new operational complexities and political challenges. We describe a new system based on student learning with the expectation that any move to such a system would be voluntary, gradual, and piecemeal and with the understanding that institutions would have to address many thorny issues in order to make such a system work. However, the existence of obstacles should not prevent higher education leaders from contemplating and discussing how our system of academic currency should change to remain relevant to the new realities of higher education in the 21st century.

Academic Currency and Distributed Education

As Russ Edgerton reminds us, the notion of credit-based course equivalencies probably began with Charles Eliot, who was elected president of Harvard University in 1869. In his inaugural address, Eliot announced his commitment to giving students freedom of choice with respect to the subjects they would study.

> *Between 1870 and 1910, as the colonial college metamorphized into the modern American college and university, the course evolved into a standardized unit of instruction of a certain length conducted by a particular professor; the idea that students should be able to elect which courses they could take became accepted; and the credit hour became accepted as a way to measure and account for student progress* (Edgerton, 2002).

The resulting credit-based system worked well for many decades. New technologies, changes in student demographics and attendance patterns, and new student expectations challenge the usefulness of this approach. The "web generation" is now attending college. These students have expectations very different from those of previous college attendees. Today, more than two-thirds of all baccalaureate degree recipients did not take all their classes from a single institution, and almost one in five attended three or more institutions. Adelman (1999; 2004) found many instances of simultaneous enrollment at multiple institutions and of "reverse transfer" from four-year to two-year institutions. This tendency has been called "swirling," and the institutions through which such students "swirl" may not even be aware of one another. These patterns emphasize how distributed learning has become a reality for modern college students. Such patterns can be hard to discern because available data about student enrollment behavior in higher education come from institutions, not students. Considering our current higher education climate, it seems highly likely that such trends will only accelerate in coming years.

The swirling student expects all the credit hours that he or she has earned to count toward a degree. The student (or his or her parents) typically does not recognize any difference between the calculus courses he or she took at a community college and those offered by a research university. But *faculty* do think there are differences. The result is a significant challenge for traditional institutions whose faculty construct degree requirements based on the assumption that all of the courses the students took fit together as intended. Most institutions simply did not anticipate the new, consumer-oriented approach to taking courses that has been widely adopted by today's college students.

These days, high school students visiting campuses as prospects assume the campus is completely wired. They expect to have high-speed Internet access as a matter of course. They also expect their professors to use—and allow students to use—the tools offered by the web in their coursework. Campus information technology planners noted the effects of these expectations in the early parts of the previous decade. In 2001, integrating information technologies into instruction was the biggest challenge cited by most IT planners, across all types of higher education institutions (Green, 2001). Now, second only to budget concerns, the greatest challenge involves securing networks due in part to the

widely diverse devices and applications that are part of campus life (Green, 2008). Similar to faculty at all institutions, those at Winona State University in Minnesota are offering students learning experiences using a wide variety of technologies designed to fit the unique needs of the discipline being taught.

Today's students not only are using the web for research and access to music, movies, and games, but they also are sitting in their residence hall rooms taking classes online. We do not have a good count on the prevalence of this practice, but at one land-grant university with which we work, 85 percent of the institution's substantial distance learning student population consists of on-campus students. How many of these students are taking classes from other institutions as well?

The latest academic year for which we have national data regarding the incidence of distance, or distributed, course offerings is 2006–07 (National Center for Educational Statistics, 2008). In that year, 89 percent of public four-year institutions, 97 percent of public two-year institutions, and 70 percent of private, for-profit, four-year institutions were offering some form of electronic distance learning. These are substantial numbers. As students become more cost conscious, we can anticipate even more swirling because students will be able to find courses from multiple institutions offered at different prices with the click of a mouse.

State planners are recognizing that developing academic materials for electronic distribution, the systems to distribute these materials, and the unique support and evaluation systems needed for students studying at a distance add up to an expensive proposition. Acting upon that recognition, many states are creating multi-institutional consortia to avoid unnecessary duplication of investment. Such consortia have proliferated so much that a decade ago, there were attempts to label them according to their function (Wolf & Johnstone, 1999). Although no single model exists, some allow students to take courses from multiple institutions and earn a degree from one of them (or even from a third party). For example, the University of Texas TeleCampus has created a multi-campus online Master of Business Administration program. Each of the participating colleges agrees to accept courses developed and delivered by their partner institutions toward the home campus degree. A consortium of community colleges in Colorado works in much the same way. These types of programs require years of planning to achieve *a priori* agreement about the types of courses each college will offer. These are valiant attempts to keep up with the practices in which students are already widely engaged.

As students swirl and institutions join together to form consortia, the faculty of a given institution no longer totally controls a student's educational experiences. So how do we ensure a degree's coherency? Although Eaton's 2002 monograph in this series (*Maintaining the Delicate Balance*) approaches this new reality from an accreditation perspective, we posit that it may be time to think differently about how credentials are awarded. We may be on the verge of an evolutionary change in the "currency base" of U.S. higher education. To make the impending change more evident, it is useful to examine in greater detail how we came from Charles Eliot's radical decision to create elective courses to where we are now.

Lessons Learned From History

The idea that collegiate learning should be portable, with credits and credentials serving as a kind of currency, is not new. There is a long history of efforts to ensure transferability and the integrity of degrees and academic credits for both learners and societal stakeholders. One strand of this history is centered on credit transfer and the gradual erosion of faculty-awarded grades as a guarantor of specific levels of academic achievement. Another is less traditional, focusing on the burgeoning vocational certification movement in business and industry, as well as nontraditional modes of college attendance such as mastery learning, competency-based degrees, and the assessment of prior learning. The successes and shortcomings of each deserve analysis as a prelude to any discussion of the potential of evolving credible and transferable learning-based credentials.

What's wrong with grades? Questions about the portability of academic credentials first arose about a hundred years ago in the context of student progression from one degree level to another. For undergraduate institutions, the key question was whether beginning students had a reasonable and adequate level of high school preparation. Graduate schools faced a similar issue with regard to the integrity of the undergraduate degrees held by students they were about to admit. One result was the birth of the Carnegie Unit for high school credit, and various versions of the semester credit hour at the college level, to "account" for the coursework that students had completed in order to earn their degrees. Both of those metrics were time-based and relied on faculty judgments in the form of grades to ensure equivalent quality. Regional accreditation was introduced at approximately the same time, serving as an external check on this process. By and large, however, equivalency in learning outcomes among similar classes was pretty much assumed. In a relatively small number of institutions that were for the most part known to one another, faculty trained at only a few places and according to common standards, and a fairly coherent and standardized undergraduate curriculum presumably helped keep independently awarded faculty grades in rough alignment with one another (Ewell, 2008).

By the mid-1970s, this unplanned but reasonably effective alignment of grades and credit equivalencies was badly broken. Hundreds of new public institutions had been created (including a new community college sector), open admissions policies had fundamentally changed student body compositions, and college-level curricula had been radically transformed through the addition of dozens of new academic fields and the almost universal adoption of distribution requirements in place of common survey courses. With the additional complication of grade inflation, which became a growing complaint in the 1980s, credits backed by faculty-awarded grades came to have less value as a portable academic currency, and the overall integrity of the baccalaureate degree was increasingly questioned by the academic community (e.g., Association of American Colleges [AAC], 1985). Nevertheless, seat time constituted the only available academic currency for transfer or employment.

Another derived application that will have to be adjusted in order to shift from using credit hours relates to how we charge for higher education services. Given that a credit hour measures seat time in some standard way, credit hours were adopted to approximate cost. Institutions

(and some states) now use credit-based rubrics routinely to analyze costs by department or program. From there, it is a short leap to resource allocation because the majority of budgeting/allocation models in use at both the institutional and state levels operate on what amounts to a "cost recovery" philosophy, in which academic departments and other units are "reimbursed" for operational costs incurred. An additional complication arises, however, because actual costs are universally acknowledged to differ both by level and discipline, and formulas are usually weighted accordingly. From "cost recovery," moreover, it is only a short leap to "price." One result is the common use of the credit hour concept to frame tuition charges (for example, $400 per credit hour) and, by implication, the levels of support provided through financial aid to the students who incur them. Although never intended for this purpose originally, the credit hour has become a convenient measure of activity and a basis for costing.

In recognition of the public concerns about higher education costs and the need for more predictive levels of cost for a degree, the for-profit company StraighterLine offers time-based pricing for higher education. Working with partners that offer courses online, StraighterLine charges a flat monthly rate. A student can earn a degree and pay based on the amount of time it takes to complete the courses.

Before examining ways in which student learning might be reintroduced as the foundation of a new academic currency, it is worth considering explicitly *why* faculty-awarded grades for credits are insufficient. At least three deficiencies can be distinguished, each of which would need to be rectified for a competency-based approach to be effective:

- Inability to communicate the outcomes of multiple learning experiences. Our current approach to certifying academic achievement looks at the highest and lowest levels of aggregation with regard to student instructional experiences, but omits the middle. At the micro level, individual grades recognize the completion of discrete bodies of course content. At the macro level, the academic degree recognizes the completion of an entire multi-year course of study. A way to recognize important (and potentially transferable) chunks of learning that focus on key abilities—for example, collegiate-level writing, critical thinking, or quantitative literacy—is missing. Admittedly, faculty consider these skills each time they give an individual course grade, but they do so inconsistently, and the resulting award will inevitably entangle judgments about student knowledge of course content with student mastery of such crosscutting skills. This mismatch is further aggravated by inconsistent requirements in the number of credit hours or length of seat time to be accumulated in order to receive a degree, as well as the fact that different course grades on a transcript may represent different credit hour values.
- Lack of agreed-upon achievement criteria (validity). Faculty-awarded course grades also lack a common referent with regard to exactly what undergoes certification. As a result, different faculty members teaching the same course will often award grades based on different sets of criteria. Further, grades are supposed to be norm-referenced; that is, faculty use grades to distinguish *relative* levels of achievement within the particular body of students who take their courses, regardless of *actual* levels of achievement. Although this principle is never completely followed in practice, instructors would surely invoke administrative ire were they to award A's or F's to an entire class based on a common standard of achievement.

Another difficulty arises from determining how much learning is certified when reduced to the accumulation of credit hours. How many credit hours should equate with a given level of achievement? Questions such as this are raised as more and more postsecondary providers use alternative distributed learning modes that violate the assumptions

of the classroom-based model. These include entirely self-directed learning approaches (such as home study or resource-based education), competency or examination-based approaches (such as Excelsior [formerly Regents] University or Western Governors University), and experiential approaches (like the University of Phoenix), in which many learning activities—although face-to-face—take place outside the bounds of formal classroom settings. In situations like these, the premises of the traditional credit model simply do not apply, though costs can surely be accounted for and the fact that learning takes place can be certified through other means. Such objections have, of course, been exacerbated by the recent explosion of web-based delivery approaches in which students may be both physically distant from instructors (and one another) and proceed at different paces. As Eaton (2002) notes in her earlier monograph in this series:

> *The college degree…is coming to represent a different type of experience: the completion of an idiosyncratic amalgam of educational experiences selected by the student from a number of unrelated institutions and delivered by a mix of technological as well as physical means* (p. 6).

A related set of objections contends that the use of seat-time measures actively inhibits the development of appropriate curricula and pedagogies by creating inappropriate incentives for faculty and institutional behavior. Most prominently, these critics contend that the credit hour reinforces a "content delivery" mindset for instructor behavior (as opposed to one based on mentoring and individual guidance) and that it actively inhibits faculty from engaging in established good practices, such as group-work outside formal instructional settings.

- Faculty judgments are inconsistent (reliability). Even if faculty-awarded grades were grounded in common criteria for learning outcomes, the fact that they are administered independently with little communication among instructors often renders them unreliable. Lacking rubrics or similar tools to help ensure consistency, different grades may be awarded for the same level of performance by different instructors—or even by the same instructor on different days. Although some institutions have recently made progress in addressing this problem in multi-section, lower-division courses, it remains an extremely widespread phenomenon. Indeed, such variability in grading standards has in large measure led to extensive distrust of grades as a credible metric of actual student achievement by external stakeholders (Milton, Pollio, & Eison, 1986).

These three deficiencies could be addressed by a comprehensive reform of the faculty grading system, accomplished coherently across the nation's colleges and universities. Indeed, the second and third deficiencies were far less typical of faculty grading practices in the 1950s than they are today, but winding back the clock in this fashion is unlikely. Recent developments in professional education and technical certification have been far more promising in showing the way toward a portable "currency" of learning.

An explosion in certification. The notion of independent, portable, achievement-based certification of particular levels of achievement is not new. Licensure in prominent professional fields like medicine and law has been in place for many years, based not upon course or program completion but upon demonstrated achievement through examination. A century ago (and until only recently in California), passing the bar was *all* that was required to practice law; candidates did not have to possess a law degree from a recognized university to sit for the exam.

Most health professions, as well as elementary and secondary education, now have independent licensing arrangements that require students to pass examinations in addition to completing their programs in order to practice. Such requirements are usually state-mandated and are

established to ensure that the public is not put at risk by allowing those who are demonstrably incompetent to practice. As a result, licensing is present only in fields in which the negative consequences of incompetence are substantial. Credentials that are not required for practice, but allow those who possess them to claim special expertise and thus command higher fees or salaries, are somewhat different but increasingly common. Perhaps the earliest examples of such "value-added" credentials are board certifications in various subspecialties in medicine. Nationally recognized certifications are now available for almost all occupations, ranging from accountants and auditors to safety equipment installers. (See the "Certification Finder" at America's Career Infonet [www.acinet.org], sponsored by the U.S. Department of Labor Employment and Training Administration.) Much of the recent expansion in third-party certification has occurred in the rapidly growing information technology sector, in which "Certified Novell Network Technician" has become a widely quoted indication of a burgeoning phenomenon. Adelman (2000) estimates that approximately 2.5 million such independent credentials were issued in IT as of 2000, in what he calls "a parallel postsecondary universe." This represents more than one year's production of traditional baccalaureate and associate degrees.

Certifications of this kind share a number of characteristics worth considering when thinking about an academic currency based on student learning:

- Achievement-based. To become certified, candidates must not only complete a given body of training but also successfully pass an examination. Most existing assessments use two parts: a knowledge test in the field (often electronically administered through a secure site) and a direct demonstration of performance in a field or simulated setting. One consequence has been the development of an alternative testing industry.
- Portable. Those certified are not able simply to seek job upgrades within a particular company, as was the case for those who completed internal corporate training programs a decade ago. Instead, the certificate stays with them as a usable credential, in addition to their formal academic training, wherever they may find employment.
- Recognized industry-wide. Possessors of such certificates are able to command competitive salaries from firms in a given industry. One of the most notable features of the recent explosion in certification is the fact that highly competitive companies find it in their interest to recognize such credentials, even though they did not create them. High-tech firms know that they cannot command a given worker's loyalty for a lifetime. Instead, it is in their interests to "grow" a competent regional workforce, knowing full well that they will have to compete with one another for talent.

To date, such certifications have been confined largely to fields of study that traditional academics tend to deride as "training." Certainly, the kinds of programs involved differ from traditional academic fields such as history or philosophy in that (1) most of those involved can agree on a particular body of knowledge and skills that defines mastery, and (2) mastery can be directly assessed through performance. But the fact that so many academic fields *cannot* command these qualities may itself be an indictment, and, in fact, traditional academic fields *do* provide some similar instances of portable certification of learning.

Learning as "currency" in traditional settings. Although far from widespread, nonvocational fields of study have some relation to achievement-based credentials independent of course taking. One of the earliest examples occurred as a result of the Hutchins reforms at the University of Chicago in the 1930s. At that time, students could test out of large portions of the curriculum based on comprehensive examinations developed and administered by the university's examiner's office. In the 1960s, several institutions were founded and accredited entirely on examination-based achievement, including Excelsior University in New York, Thomas Edison State College in

New Jersey, and Charter Oak State College in Connecticut. These institutions conferred traditional academic degrees, with grades mapped to course equivalencies. But the standard that backed these grades was based directly on student performance using criterion-referenced examinations.

Alternative institutions based on assessed achievement remain rare. Portable, achievement-based learning credentials that are used without much question *inside* most established colleges and universities are more common. Among the most prominent are:

- Advanced Placement examinations. The College Board Advanced Placement (AP) examinations are recognized for college credit by a majority of traditional colleges and universities. Students can earn the average of a full semester's credit—or, at the very least, advanced standing in a particular discipline—if they perform well on such examinations, administered in 22 fields.
- Course-equivalent examinations. Best illustrated by the College Board's College Level Examination Program (CLEP), substantial numbers of traditional institutions allow students to test out of particular courses and receive credit by taking nationally normed, course-specific examinations.
- Award of credit based on prior achievement. Large numbers of colleges and universities award credit based on demonstrated past experiences and achievements using mechanisms such as the credit equivalencies established by the American Council on Education (ACE) for military and corporate training programs. Other institutions award credit using prior learning assessment as structured by the Council for Adult and Experiential Learning (CAEL).

Although many institutions use such mechanisms, they account for only a small percentage of the academic credits awarded. Institutions also are free to set their own standards and use the resulting credentials to place students or award credit as they see fit. But the fact that they exist at all within traditional academic frameworks suggests that the notion of portable credentials based on demonstrated, criterion-referenced achievement is not as outlandish as it seems.

What Would a Seamless System Actually Look Like?

Because of the number of factors involved, it may be useful to illustrate the notion of "learning as academic currency" by example. Accordingly, we provide three different scenarios of individual students participating in distributed learning in the year 2020 that may serve to flesh out the concept.

- Jonathan is a 16-year-old, upper–middle-class student who lives in Menlo Park, California. He is enrolled in three new AP classes at his high school, which are accredited for college-level dual enrollment through the University of California (UC) and the California State University (CSU) systems. Student examinations and assignments (electronically generated, of course) are graded centrally through this agreement by a uniformly trained group of raters (UC graduate students) who forward their assessments to a coordinated, statewide credit bank. Next year, while he is still a high school senior, Jonathan expects to enroll in several web-based freshman courses in history and anthropology at Stanford University, where he is already part of a course-based chat room with his brother, who is currently a student at Stanford. Jonathan also knows these courses will help expand his portfolio at UC Davis, where these courses are recognized through articulation. Using the accelerated option at that institution, which allows him to test out of courses through independent projects and authentic assessments, he expects to enroll in law school by the time he is 19 years old.
- Joan is a hard-working, 28-year-old single parent who holds a full-time job at an electronics assembly plant in the suburbs of Chicago. She is currently in her second year of part-time study at a local community college, working toward a transferable associate degree in electronics manufacturing technology. This program is fully competency-based, meaning that each module is independently completed in as much time as it takes the student, and mastery of the material is demonstrated through a capstone assessment. Joan's employer recognizes two levels of achievement within this educational program with an increase in salary grade, each corresponding to 12 successfully completed modules. In some cases, she can complete modules quickly because they represent skill areas in which she has already received company training or that she is practicing on the job. As she nears the completion of her program, she begins to work on her transfer portfolio for the state university in her area. To be admitted with junior standing, she must prepare exhibits in this portfolio that demonstrate her achievement in five collegiate skills areas, which will be assessed by faculty readers drawn from a range of disciplines. Ten years ago, this admissions system replaced both course-based articulation for transfer admission and the use of SAT/ACT scores for freshman admission at all public institutions in Illinois.
- Sam is a 46-year-old sales representative covering a multi-state territory for a major national firm. Seventeen years ago, he began his education while employed as a service worker in a Baltimore restaurant by dropping into a neighboring Sullivan Learning Center. Intrigued by the possibilities of working his way out of a dead-end job, he paid some hard-earned wages for a comprehensive work-related diagnostic assessment battery. Results

revealed excellent oral and visual communications skills, but gaps in many other areas. He was assigned a mentor by Sullivan and has since engaged in multiple learning opportunities including coursework at nearby colleges, directed reading and research, independent online investigations, and a steady progression of increasingly responsible jobs. Periodically, Sam enters samples of his work and experience into an electronic portfolio for validation by the National Credentialing Clearinghouse (NCC). Trained assessors at NCC determine his current level of mastery using a set of national benchmarks in 14 skill and knowledge areas recognized by thousands of educational institutions and employers nationwide. Upon release, these entities can promptly access these transcript records—and sample the actual work that lies behind them—which is how Sam obtained his current job.

Although fanciful, these scenarios reveal a number of key features of a seamless and portable system of academic achievement. Among the most prominent are:

- Academic awards structured in terms of outcomes or competencies, instead of courses and seat time.
- Academic awards based on demonstrated achievement of competencies through assessment.
- Early assessment of outcomes or competencies to determine individual gaps in current abilities that can provide guidance about the kinds of subsequent learning experiences in which students should engage.
- Learning opportunities beyond formal coursework, with provisions for certifying learning obtained on the job or through past experiences.
- Prominent role of mentors or advisers in helping shape divergent individual paths of learning toward established competencies.
- Third-party verification of attainment through a professional organization, consortium of institutions or providers, or registry.
- Ready acceptability of credentials to higher education institutions and employers, with clear consequences and equivalencies established for both.
- Multiple examples of student achievement—both for individuals and for institutions—readily accessible in the form of a portfolio or web site.
- A distributed learning system in which delivery mode is unimportant.

These elements have already been tested in higher education, but they have yet to be drawn together into an acceptable alternative system of academic currency.

A System of Student Learning as Currency—Why Now?

As distributed learning becomes more widespread and students experience it both in parallel with and subsequent to traditional learning, a new approach to "accounting for" student achievement is needed. In the past, the credit hour was the measure of choice, but problems with this measure abound, primarily because the number of hours spent in a classroom or a course provides little indication of the real learning that may have occurred (Oblinger, Barone, & Hawkins, 2001). This fact, coupled with a growing understanding that individuals learn different subjects at different rates, reinforces the utility of specific *competencies* as descriptors of student learning and *assessments* of those competencies as measures of student learning. After describing and measuring student learning through competencies and assessments, the amount of time a student spends acquiring that knowledge is of little importance; what matters is what students know and can do. Any new measure of academic currency must also embody key characteristics that credit hours or seat time exhibit: simplicity, flexibility, and credibility.

Competencies and assessments: The basics. Moving to student learning as the basis of academic currency requires both a way to *describe* the desired learning outcomes and a method to actually *determine* achievement. Competencies are specific descriptions of what students know and can do. Assessments are the methods used to determine actual levels of student achievement. Assessments can take many forms including examinations, real-life tasks, or simulations. Both competencies and assessments have some basic features, which must be fully understood.

Competencies are statements of *doing*—that is, what kinds of tasks can a student actually accomplish or what kinds of skills can he or she apply in a particular context? They can range from fairly broad statements at the institutional level, through narrower ones at the program level, to extremely detailed statements for course-level outcomes. Competencies, in the form of student learning outcomes, are not a new concept in higher education. Instructors often use learning objectives to guide their courses, but competencies require these learning objectives be restated in more detail, systematically, and in terms of what a student should know and be able to do. Even instructors who do not establish specific learning objectives for their courses have some notion of how students should be different as a result of instruction. The key to constructing usable competencies is to have instructors think deliberately about this matter. This activity always requires substantial thought and discussion. Multiple iterations may be necessary to arrive at a set of competencies that satisfy instructor needs and that effectively communicate to students and stakeholders. Stronger and more specific language is usually necessary for traditional learning objectives to be transformed into competencies. But once accomplished, the "heavy lifting" has happened—a shift in perspective from a time-based to an achievement-based description of learning. Ongoing maintenance can then become a new routine. Getting there, as the next section describes, will require substantial changes in the ways both external bodies and institutions themselves organize their incentives.

Assessments are the methods used to determine if competencies have actually been achieved. They can run the gamut from traditional paper-and-pencil examinations to real (authentic) tasks, such as the clinical experiences

used in health-care education. In between, different methods are continually being developed, including computer simulations, videotaping of student performance in prescribed situations, and team-based problem-solving exercises. Levels of student performance on these assessments are then assigned based on particular characteristics identified by instructors as critical for "satisfactory," "unsatisfactory," or "exemplary" work. The resulting scoring guides for assessments are often termed "rubrics." On a good scoring rubric, an instructor will have specifically identified the various skill and knowledge elements that students must demonstrate as part of a complex, integrated activity (for example, writing out the steps taken to solve a math problem rather than simply writing down the correct answer). The instructor also will have described these elements in detail in terms of what is required to achieve a particular score. The use of assessments and scoring rubrics makes the grading process more understandable for everyone and more diagnostic for the student (Walvoord & Anderson, 2009). Students remember producing research papers written with great care but returned with a lower-than-expected grade emblazoned on it, with no instructor feedback explaining the reason for the "B." Competencies, assessments, and scoring rubrics help eliminate some of this confusion by identifying—explicitly—what was good or bad about a given performance.

Although there is much work to be done before a trouble-free system using student learning as academic currency can be put in place (see **Policy Implications**), we believe that the use of competencies and assessments meets the requirements of simplicity, flexibility, and credibility, as well as portability. They are rooted in instructional objectives and provide explicit guidance about the performance levels required for different levels of attainment. Moving from where postsecondary education is now to where it needs to be will require concerted leadership on multiple policy fronts.

Policy Implications

The policy changes required to embrace student learning as academic currency are conditioned by both the broader landscape of higher education and individual institutions. We will explore a number of issues related to the overall environment for postsecondary education, and based on this, we pose some questions for policy leaders at the institutional and state levels. In addition, we outline some of the approaches being taken in federal and accreditation policy that support the movement to student learning as academic currency.

Policy implications for postsecondary education. Does student learning as measured by competencies and assessments fulfill postsecondary education's needs for simplicity, flexibility, and credibility in an academic medium of exchange? With targeted policy intervention, we believe that it can. Moving to a student-learning-as-academic-currency model does not tear asunder the current model of academic accounting with respect to either credentialing or cost. It does demand rethinking, and perhaps decoupling, these two

What About Transfer and Student Mobility?

Any change to the current credit system raises questions about transfer and student mobility. Although campuses that adopt student learning as their academic currency will have to confront transfer issues, change can happen gradually and in piecemeal. Consider the following:

- This new model does not need to be implemented for all disciplines or subject areas; a phased implementation can be used. The institutional leadership may want to start in only one subject area, such as mathematics, before adding other subject areas.
- Participation in any new model is always a matter of choice; the same is true with this one. Leaders at institutions, systems, or states choose how and in what areas they want to voluntarily use student learning as the currency for transfer. An analogy in the existing system of postsecondary education is the use of AP exams or CLEP scores for credits. AP credit is accepted in some subject areas at some institutions, but it does not have to be adopted, and it may be "worth" different amounts of credit when it is adopted.
- Like articulation agreements, competency-based transfer agreements likely will happen first among institutions or systems that already work together. The reason for participation will be to enhance faculty, student, and administrative understanding of what is expected from everyone—instructors in terms of what will result from coursework and students in terms of their learning.
- The infrastructure of competencies and assessments needed under a new system (although new and different) is probably no larger than the infrastructure that underlies the current system—a "hidden" complex of course assignments and scoring assumptions that form the basis for credits and grades.
- We are not proposing to replace individual courses with a list of competencies. Rather, we assume the integrative nature of knowledge and skill areas means that assessment of student learning will capture outcomes for what is now a collection of courses found in the current system, for example, "general education quantitative reasoning knowledge and skills," *not* Statistics 101 and part of Statistics 102.

different accounting systems. It may be neither possible nor desirable to achieve the same kind of universality of application for replacement metrics in the future as the credit hour had in the past. Distributed learning opportunities contribute to making the ways in which students work with institutions much more complex. As technological innovations enrich learning experiences, the complexity of these student-institution relationships is likely to expand in ways we cannot imagine. A single metric may not be able to cover all scenarios.

The policy implications of implementing an academic currency based on student learning are:

- Simplicity. Instructors who already define student learning outcomes for their classes will have little to change in a system based on student learning. But this change will require a large assessment superstructure to collect the data needed for management or accountability purposes. By shifting the focus to student time spent in learning activities of known value or disaggregating faculty instructional functions to account for time spent doing different activities, it can be easier to imagine new accounting metrics. Indeed, many states have already incorporated such features into their costing models and funding formulas. Accreditors also are endorsing the use of student learning outcomes and assessment plans by postsecondary institutions to ensure that learning is occurring (Eaton, 2002).
- Flexibility. Until recently, the credit hour system has proven remarkably flexible in applications across various institutions and instructional settings. But with the spread of distributed learning, the flexibility of the credit hour concept has reached its limit. Documenting student learning directly extends flexibility because it does not matter how, where, or when a student learned. What matters is whether students can demonstrate their knowledge and abilities on rigorous assessments. Competencies and assessments may require more *a priori* thought on the part of instructors, but their use would potentially increase the flexibility students have in acquiring and documenting learning.
- Credibility. The credit hour concept has powerful face validity, primarily because it represents the basis of how most people experience college. Recently, the *direct* assessment of learning has grown in credibility in some academic and political settings. Examples range from the rising numbers of third-party credentials awarded in professional and vocational education, to the recent surge of interest in state-level direct measures of undergraduate performance stimulated by *Measuring Up 2008* (National Center for Public Policy and Higher Education, 2008) and demonstrated in five states in 2005 (Miller & Ewell, 2005). However, for approaches such as competency testing to become "business as usual" in higher education, as it has in K–12 education, policy makers must overcome the formidable challenge of agreeing on what is to be tested and how.

Institutional policy implications. If institutions are to embrace student learning as the foundation for academic currency, many established features of the academy will have to change. Among them are basic curricular design, teaching and learning interactions, institutional support for instructional design, institutional cultures and policies that govern how faculty spend their time, and the methods for enacting faculty promotion and tenure policies.

- Curricular design. Although some might think that moving to student learning as academic currency sounds the death knell for traditionally configured course-based programs, this is far from the case. Within institutions, programs will no longer be primarily defined as a collection of courses. Instead, specified sets of student learning outcomes will define a program. How can such curriculum-wide outcomes be established on a practical basis? In many cases, such outcomes can be adapted, or "rolled up," using individual course objectives. Alternatively, student-learning outcomes

for a program will be determined from scratch by faculty, and then checked against current course outcomes through a syllabus review. Where "chunks," or a specified sequencing of learning opportunities, already exist (in writing, for instance), or where faculty closely monitor the coherence of curricular sequences (a presumed set of underlying competencies that are likely to already exist), then close faculty ties to the underlying assumptions on which the curriculum is based will facilitate moving to a student-learning-as-currency model. Using such existing prototypes, the new model can be gradually adapted from the existing credit hour and grade system, and it does not have to happen in all areas at once.

- Teaching and learning activities. Adapting basic teaching and learning activities at many colleges and universities to center on the notion of student learning as academic currency also can evolve gradually. After all, specifying learning objectives is supposed to underlie sound curricular design, and the resulting objectives ought to form the basis of all instructional activities. But moving to an explicit structure of competencies and assessments forces instructors to stop what they are doing and closely consider what students should know and do as a result of their learning opportunities. The key is how explicitly and specifically competencies can be identified and, in fact, can be shown to be the result of a particular set of instructional activities. Many institutions already focus on student learning outcomes as part of their larger institutional program review and assessment programs, but this clearly will be required to a greater degree in the future if this transition is to occur.
- Instructional design. Instructional design intentionally focuses on how curricula and learning opportunities are structured to achieve particular student learning objectives. Colleges and universities are increasingly emphasizing instructional design because they realize that although faculty members are subject matter experts in particular fields, they may *not* be well-versed in teaching and pedagogy. Instructional support and service centers are becoming available to faculty on many campuses to help address this condition. Policy changes will be needed to encourage faculty to use these resources more fully and to build their capacity as key institutional resources.
- Use of faculty time. Institutional culture and policy largely determine how faculty divide their time among the three primary goals of higher education: teaching, research, and service. Moving to a focus on student learning as currency will require a further disaggregation—or "unbundling"—of faculty time in order to recognize (and reward) participation in curricular and instructional design activities (Paulson, 2002). These changes also may suggest that

Questions for Institutions to Ask

- How does the institution support faculty as they collaborate to explicitly define student learning outcomes for each degree program offered?
- How can faculty members be encouraged to use defined student learning outcomes to facilitate student transfer from one major to another or from one institution to another?
- How do institutions support faculty members in the agreement upon and development of assessments (stand-alone or course-embedded) and assessment processes and protocols that can capture student abilities on stated learning outcomes in a credible fashion within an expanding community of judgment?
- What processes do institutions have in place to support documentation of student learning obtained outside institutionally provided learning opportunities (for example, from on-the-job, military, family, or extracurricular activities)?
- Are members of the faculty evaluated—and promotion and tenure awarded—based on how well they design curricula around established student learning outcomes and how well they use appropriate pedagogy to support students in achieving competence?

further divisions of labor may improve curriculum design by allowing instructional designers to develop curricula, technical experts to build them using state-of-the-art learning management systems, and individual faculty to focus on the mediation function—the one-on-one interaction with students needed to help them make sense of the subject matter. Such changes will help encourage faculty to ensure that learning outcomes are explicitly stated and designed into curricula, and that appropriate assessments are used.

- Faculty reward system. Changing faculty behavior requires a concurrent and equally supportive change in formal promotion and tenure guidelines, as well as other forms of tangible and intangible benefits distributed to faculty within the wider academic culture. Faculty who intentionally use competencies, assessments, and scoring rubrics to describe and credential student learning must be recognized and rewarded. If they are not, the message will be clear to other faculty that despite positive rhetoric, such behaviors are not accepted by the institution, and faculty commitment will quickly diminish.

State and system policy implications. In order for institutions to adopt a model based on learning as academic currency, states and systems must simultaneously implement policies and funding formulas that consistently support these objectives. Policy areas of primary concern at the state level include, first and foremost, whether the state or system—and its stakeholders—actively see the value in a system based on learning outcomes. Appropriate financing mechanisms, reward structures, and student transfer processes and requirements can emerge from this basic vision and commitment.

- Vision for distributed learning. States and systems must have a well-thought-out vision for how distributed learning will best meet the needs of their students, as well as positively influence the economic and social fabric of their states. It is from such a vision of education as an important element of social capital that coherent policies supportive of a student-learning-as-currency model will emerge. Business and community leaders must be involved in the development of this vision because their support will be critical to implementing the specific policies needed to realize it.
- Financing and reward mechanisms. The key leverage any state or system can exact on individual institutions, faculty, and administrators is its financing mechanism. A funding formula or a workload-reward system based on credit hours generated simply will not work in a student-learning-as-currency model. Adaptations are first necessary to refashion these mechanisms to recognize student progress based on the achievement of particular learning bench-

Questions for States to Ask

- What particular postsecondary competencies does the state desire its citizens to attain, and at what levels? Have these been explicitly articulated in the form of a qualifications framework? How are these determinations linked to economic and societal needs?
- What is the state or system's vision of how distributed learning can enhance postsecondary education within the state or system?
- What existing policies support or inhibit the attainment of this vision? How might changes in these policies alter existing incentive structures?
- How do financing mechanisms and funding formulas recognize and reward the contributions of all participating entities? For example, how are institutions rewarded for being providers of both content and service as students achieve competence? Or, how can faculty and support staff at various institutions be appropriately recognized and rewarded as they develop programs based on student learning and assessment?
- How can transfer policies be streamlined among postsecondary institutions in the state using student learning outcomes and assessments?

marks (for instance, completion of the writing sequence of the general education component of a curriculum) based on faculty-developed and -sanctioned assessments of student outcomes. Special-purpose funding allocated to institutions to help develop this capacity would simultaneously further its development.

- Transfer policies. Almost as critical as funding is how seamless the transfer process is for students. As mentioned earlier, today's students are highly mobile and, as distributed learning expands, the phenomenon of multiple institutional attendance will increase. Transfer policies are therefore of paramount importance in moving to a new model. Several states, including Utah and Missouri, have already engineered statewide general education requirements around agreed-upon student goals or competencies, and many more states are contemplating such a move. Competency-based transfer arrangements need not be put in place all at once, but can be implemented one skill area at a time as agreement is reached.
- Private institutions. It is critical that state planners remember their responsibility to reflect all the higher education assets within the state. In pursuing each of the issues raised above, planners must consider the effects on their private (nonprofit and proprietary) as well as their public institutions.

Federal and accreditation policy. Both federal policy makers and accreditors have become aware that the notion of student learning as academic currency has grown in importance. The growing volume and variety of distributed learning institutions and consortia have pressed federal policy makers and accreditors hard and have caused these two usually conservative entities to sit up and take notice.

Financial aid is the primary federal policy that would need to change if a student-learning-as-academic-currency model is to work. The 1998 amendment to the Higher Education Reauthorization Act established a set of "Distance Education Demonstration" projects to test new methods not based on credit hour completion for documenting student progress. In some of these projects, federal financial aid was distributed based on students' progress in meeting pre-established, achievement-based milestones in their path toward earning a given degree. Upon successful achievement, a portion of financial aid was released to the student. Unfortunately, in the 2009 amendment to the Higher Education Reauthorization Act, these projects received no funding; Section 491 of the Higher Education Opportunities Act (HEOA) is the only reference to the distance education demonstration projects which requires the Secretary of Education to report annually to Congress on the program.

Accreditors also have been pressed to think differently as distributed learning becomes more widespread (see Eaton's monograph in this series). Many, including established bodies like the Western Association of Schools and Colleges (WASC), the Higher Learning Commission of the North Central Association of Colleges and Schools (NCA), the Middle States Association of Colleges and Schools, Commission on Higher Education (MSA/CHE), and the Southern Association of Colleges and Schools (SACS), are modifying their standards and review processes to place less emphasis on particular resources and academic structures, and to focus more on the achievement of defined learning outcomes by any means necessary. Concomitant with this development is often recognizing new faculty roles, together with accepting that employing a cadre of full-time, discipline-oriented faculty may not be the only way to achieve desired student learning outcomes. Meanwhile, accreditors, like the Teacher Education Accreditation Council (TEAC), have emerged, with the freedom to craft learning-centered standards and review processes from the ground up. Clearly, because they are member-based organizations, accreditors will not always find these changes easy. But the rapidly changing structure of instructional delivery is increasingly making such transformations inevitable.

Summary

A host of escalating problems is associated with the continued use of credit hours and grades as the principal measures of academic achievement as students continue to move within and among institutions both physically and electronically, and these problems are exacerbated by the growing prevalence of distributed education. The most straightforward way to address these problems is to shift from a seat-time–based to a competency-based approach to academic accounting. Under the latter, each student is required to directly demonstrate his or her achievement of specified levels of abilities, like oral and written literacy or subject-specific knowledge. The underlying change may seem radical, but it is in many ways just another evolution. In many cases, faculty members already specify learning objectives for each course. Given the right incentives at the institutional and stakeholder levels, these course objectives can evolve into course competencies, and eventually into program-level and degree-level competencies that are credible to employers and other institutions. In this way, a new approach to academic currency based on actual student learning can be forged. As our colleague, Russell Edgerton (2002), reminds us:

> *The key features of our approach to quality assurance are the end product of a long history of evolution. The pattern has been for a practice to emerge at one historical moment and then become accepted as "the way things are" and become locked into the system by the expectations of multiple constituencies both inside and outside academic institutions.*

Perhaps another historical moment is upon us.

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