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TRENDS AND ISSUES

THE VALUE OF LEARNING

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EXECUTIVE SUMMARY

Given the repetitive calls for information about student learning that have been directed at the academy for the past couple of decades, it should come as no surprise that such a demand figured prominently in the report of Secretary of Education Margaret Spellings' Commission on the Future of Higher Education, *A Test of Leadership: Charting the Future of Higher Education*. In that report, the commissioners recommended that "the results of student learning assessments, including value-added measurements that indicate how much students' skills have improved over time, should be made available to students and reported in the aggregate publicly" (p. 23). Accordingly, "in an effort to increase transparency and accountability," Secretary Spellings' "Action Plan for Higher Education: Improving Accessibility, Affordability, and Accountability" includes "plans to provide matching funds to colleges, universities and states that collect and publicly report student learning outcomes."

Why should policymakers concern themselves with learning outcomes? After all, students who complete a certain number of credits with a certain set of grades that purport to reflect what they have learned enter the workforce and civic life with a clear advantage over those who have only a high school degree.[1] Thus, it might be argued, higher education has passed the test of market. What more do we need to know?

In an attempt to answer that question, this paper will begin with an overview of learning assessment over the past couple of decades. Both states and accreditors have been asking institutions to assess student learning outcomes for at least that long. But as literacy levels among U.S. adults have dropped over the past 10 to15 years and the country's college participation and completion rates have declined relative to the rest of the world, questions about higher education quality, student access, and college completion rates have become of growing concern.

The paper will also describe certain breakthroughs in assessment measurement and momentum-building initiatives that may give students, educators, and policymakers alike greater confidence that the learning that colleges are in the business of fostering is being provided, mastered, and measured.

[1] According to the most recent government report based on data from the Census Bureau, the average gap in earnings between college graduates and those without the degree is about $23,000 a year (see http://pubdb3.census.gov/macro/032005/perinc/new04_001.htm).

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BRIEF HISTORY OF THE ASSESSMENT MOVEMENT

The year 1985, during which the American Association for Higher Education held the first national conference on assessment, is often pointed to as the beginning of the assessment movement. Within a year of two of that date, the Southern Association of Colleges and Schools began to ask that campuses address the question of learning outcomes as an element of their institutional accreditation self-studies, and several states (Virginia, South Carolina, Missouri, and Colorado) implemented policies that required campuses to implement campus-based assessment plans.

The original impetus for assessment was two-fold. On the one hand, researchers had been tracing the effects of college on students for at least a decade and had begun to develop the vocabulary, models, tools, and taxonomies of student outcomes (Ewell, 2002). Assessment was seen as a way to track those effects in order to improve programs. This was the kind of assessment accreditors were most interested in: with increasing insistence, they asked institutions to systematically look at their results, create a "culture of evidence," and to use that evidence to improve learning.

States were also interested in program improvement, and at this time they generally accepted the argument that such improvement was most likely when faculty tailored the assessments to their individual programs. But they also wanted colleges and universities to report their outcomes as part of a general push for accountability, perhaps best captured by the title of a 1986 National Governors Association report, *Time for Results*. This demand for accountability was seen as responsible stewardship of a state-owned enterprise: the states' investments in their systems of higher education had been massive, other social services had begun to compete seriously for scarce state dollars, and the end of the "put-the-money-on-the-stump-and-trust-me" era of state services generally was coming to a close.

Although states such as Tennessee and Florida had been administering standardized exams to students for years, most campus-based assessment done in the late 1980s and beginning of the 1990s was individualized at the program level, with an increasing tendency to eschew standardized tests in favor of faculty-developed instruments, many of which were performance-based rather than multiple choice. Accreditors found that individualized assessments suited their approach to quality assurance, faculty preferred them to off-the-shelf multiple-choice measures that may have had a poor fit with their

program goals, and for several years the states were willing to accept institutions' systematic monitoring of their results as accountability enough.

But over time, institutions' inability to provide an answer to the "How are we doing?" question began to bother policymakers. That answer, after all, depends on the response to another: "Compared to what?" Is an 80-percent pass rate on a home-grown exam good or bad news? And how do we know that the goals of the program are reasonable and that its standards are high enough? Accordingly, in the early 1990s many states turned either to standardized testing or to performance measures, which may or may not have included learning outcomes, as a way to hold campuses accountable and to enable coordinating and governing boards to publicly report comparable data. Meanwhile, the federal government weighed in: the 1990 National Education Goal 6 (B) (v) called for colleges to "increase substantially" "the proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems."

Fast forward to 2006. Currently the questions that higher education is being asked to answer about learning outcomes remain the same, but the context in which they are posed is different. At the federal level, the Department of Education, satisfied with the implementation of No Child Left Behind and disturbed at the generally disappointing performance of college graduates on the 2003 National Assessment of Adult Literacy, has turned its attention to the performance of the college educated. Meanwhile, the National Center for Public Policy and Higher Education has pointed out in three successive editions of *Measuring Up*, the national report card on higher education, the nation's failure to assess college-level learning comparably across states, while at the same time demonstrating that it can be done in a pilot project called the National Forum on College-Level Learning.

In that project, five states (Illinois, Kentucky, Oklahoma, Nevada, and South Carolina) took a snapshot of the general literacy level of their college-educated residents by means of information supplied by the National Adult Literacy Survey and looked at the achievement of their higher education system's (public and private, two- and four-year) graduates as revealed by their scores on graduate admissions and licensure tests. Moreover, they assessed the average general intellectual skills of college students educated in the state by administering WorkKeys to a random sample of exiting students on a representative sample of their two-year campuses, and the Collegiate Learning Assessment to a similar group on their four-year campuses (for the full project report, go to http://collegelevellearning.org). Both the Commission and the State Higher Education

Executive Officers National Commission on Accountability have recommended that the model be adopted nationwide.

WHY SHOULD POLICYMAKERS CARE?

But why should policymakers want to have this information? A college education certainly provides substantial benefits to the individual who obtains it: the employment, economic, social, and health advantages are widely documented[2] and are the basis for the argument that a college education is largely a private good that should be paid for by the person who benefits from it.

But each of those private goods translates into a public one. For example the six percentage point disparity between rates of home ownership of high school and college graduates (68.5 percent vs. 74.5 percent) and the $23,000 annual income disparity between those two groups both have major tax consequences for states,[3] while high school graduates' 2.1 percentage points greater unemployment rate (5.1 percent vs. 3.0 percent in 2004) places greater demands on unemployment insurance in particular and social services (such as incarceration and health care) in general. College graduates also comprise a more knowledgeable and active citizenry: about 60 percent of them voted in the 2002 Congressional election as opposed to less than 40 percent of high school graduates (Mortenson).

Finally, the effects of having a knowledgeable population are cumulative, since educated people flock to where others like them live and create communities that are more likely to be prosperous, civically and economically dynamic, and safe.[4] According to Christopher Berry, highly skilled regions increased their population size by 45 percent between 1980 and 2000, compared to metropolitan areas with less than 10 percent of the population with a college degree, which grew by 13 percent during the same period (Fischer, 2006)

But even more important in the eyes of many policymakers is the economic edge an educated citizenry affords its state in the new global knowledge economy. Thomas

[2] See for instance Baum and Payea.

[3] Both the rate of taxation and the amount taxed are affected. The losses vary by state, but one researcher, David Wright, in an unpublished paper written for the National Center for Public Policy and Higher Education, has calculated lost tax revenues using a 15 percent tax rate on incomes of individuals with less than a college income and 25 percent for those with a college degree, based on 2003 tax-return data and research that documents a relationship between educational attainment and income levels.

[4] See Florida, R. L. (2005), *The flight of the creative class: The new global competition for talent.* NY: HarperBusiness.

Friedman's widely cited work on the flattening world is only one analysis of the importance of advanced education to the future prosperity of states and the nation. The historic American economic hegemony has depended in part on its early start in the educational arms race, but it is beginning to be overtaken by other nations. As *Measuring Up 2006* pointed out, "The nation as a whole has made no notable progress since the early 1990s in enrolling young adults or working-age adults in education and training beyond high school. Furthermore, participation in education beyond high school still varies by race/ethnicity and annual family income." Meanwhile, other nations are surpassing us on key measures such as entry rates into higher education (on which the U.S. ranked 8th in 2003). Our completion rates also compare poorly to those of other nations (there we rank 11th). And since the fastest-growing young population in this country is comprised largely of precisely those ethnic, racial, and economic groups whose participation and completion rates have lagged in the past, without active intervention the U.S. advantage is likely to erode at an increasingly rapid rate.

WHY LEARNING?

All of these warning signs are based on credentials. But that is not enough information for us to have. Americans have recently been reassuring themselves about the number of science and engineering graduates coming out of countries such as India and China with the observation that their degrees don't signify the same as ours do. And it is true that it is not the degree but the learning that matters since, as the French economist Jacques Lesourne has put it, "each student will be competing with other students throughout the world with similar skills."[5] But the truth is, we don't know much about the knowledge or abilities that our degrees warrant.

This is not to say that individual faculty, programs, institutions, or even states don't know what their students know: Faculty grade students and award credits, for instance. But grades and credits have suffered from credibility problems for a very long time, with the most intense skepticism coming from within the academy. The Carnegie unit, the original model for the credit hour, was instituted in high schools because colleges found that entering students were prepared so variously that it was hard to determine on the basis of grades alone who was ready for college-level work. It, and later the college credit hour, were supposed to signify a certain chunk of academic content that, when combined with a grade, revealed how much a student knew and to what level of sophistication.

[5] The future of industrial societies and higher education, "*Higher education management* 1(3), 1988, pp. 284-97 (quoted in Wagner).

But this system depends on a common understanding about the content and competencies represented by credits and grades, and over time, people within higher education have lost that trust. Colleges and universities' skepticism about the grades coming from high schools has led many to require SAT and ACT scores as further evidence of prospective students' achievement and capacity. But they also distrust each other, as evidenced by arguments over transfer credits; worries about grade validity, reliability, and inflation; and graduate schools' emphasis on standardized entrance-examination scores in the admissions process. As Sally Johnstone, Peter Ewell, and Karen Paulsen point out,

> "By the mid-1970s, [the] unplanned but reasonably effective alignment of grades and credit hours 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." (p. 5)

Trust has also eroded between higher education and the professions for which it prepares students. Those professions in which health or safety are at stake, for instance, generally require that practitioners not only complete college programs but also pass separate licensing exams that certify mastery of crucial knowledge and skills.

This skepticism about the trustworthiness of grades and credits as a warrant of learning reaches outside the academy and the professions. In a recent survey of corporate human resources officers by the Conference Board, Corporate Voices for Working Families, the Partnership for 21st Century Skills, and the Society for Human Resource Management, only about a quarter of the participants rated four-year college graduates as excellent in critical thinking, problem solving, written and oral communication, reading comprehension, and other key intellectual skills (almost half of the respondents rated community college graduates as deficient in written communications). Only in "information technology application" did almost half of four-year college graduates rank as excellent (25.7 percent of community college graduates were considered excellent on this measure, their highest score).

States too have found simply counting college graduates to be an inadequate measure of their educational capital or the effectiveness of their higher education systems. A number require that their public institutions report on the aggregate learning of students in their programs. But if they rely on campus-based assessment, they have no benchmarks against which to gauge that performance. A few states have moved to standardized testing, but even they cannot compare their institutions' performance to that of like institutions in other states or their aggregate state literacy information to similar information from other states.

Where we have national (if not state-specific) information about the literacy of the college educated, the news isn't good. The 2003 National Assessment of Adult Literacy found that college graduates performed, on average across the nation, less well in all areas of literacy than they had in 1992.[6] Moreover, only 31 percent of them performed at the level of "proficient" on the prose and quantitative literacy assessments, and only a quarter performed that well on document literacy. A special administration of the same literacy survey to a nationally representative sample of college students was no more encouraging: Although the students did better than non-college-educated Americans, the study revealed that "approximately 30 percent of students in 2-year institutions and 20 percent of students in 4-year institutions have Basic or below quantitative literacy" (Baer, Cook, and Baldi, p. 5). The little internationally comparative data that we have on the college educated reveal that other nations are doing better. In a table of mean literacy scores "for population ages 20 to 25 with some college or university education," the U.S tied for ninth place (Wagner, p. 22).

Other nations are aware of the U.S.'s lack of homogeneity when it comes to the meaning of the baccalaureate. As part of the Bologna Process, in which a number of European nations are attempting to standardize their college degrees, 45 countries have recently agreed to adopt a three-year baccalaureate by 2010. When American higher education leaders voiced their concern about accepting these degrees as equivalent to the four-year U.S. bachelor's degree, the European representatives at a recent meeting convened to discuss the ramifications of this decision expressed skepticism about the U.S. degree. As one European leader said, in the U.S. "a bachelor's degree is not necessarily a bachelor's degree" (Jaschik).

[6] The average score of college graduates on prose literacy in 2003 was 314 (as opposed to 325 in 1992), on document literacy 303 (vs. 317 in 1992), and 323 on quantitative literacy (the prior score had been 324).

The skepticism about what American college graduates know and can do is accompanied by doubt about the value colleges add to their students' intellectual skills—that is, their effectiveness in contributing to the polity's educational capital. It can reasonably be argued that it is in states' and the nation's interest to use higher education to increase the skills of all citizens, even if it isn't to the level that we generally associate with a college degree. But even that contribution of postsecondary education has been called into question. Periodically the argument surfaces that colleges and universities do their most important work when they admit students—that is, when they sort America's young adults into two basic ability classes: those who will lead and those who will follow. It is profoundly in higher education's self-interest to prove this supposition wrong, since, as Sir John Daniel once remarked, "Good little piggies going in make good bacon coming out is a counsel of despair for educators."

WHAT HAS CHANGED IN THE TESTING BUSINESS?

This converging information about the problematic knowledge and skills of college graduates had a profound influence on the Commission on the Future of Higher Education's work, which pointed to the National Assessment of Adult Literacy results and employers' complaints about the skills of college graduates as justification for their recommendation that institutions assess the learning of their exiting seniors and document their contributions to that learning by means of value-added, standardized, comparable measures.

Two such measures in particular were singled out for notice: the Collegiate Learning Assessment (CLA) and the Measure of Academic Proficiency and Progress (MAAP). The former is particularly interesting in that it demonstrates how recent developments in the use of technology in testing are having an effect on the testing business—an effect that may obviate some of the complaints critics have about standardized tests.

For many people, the term "standardized test" means multiple choice. When they were originally developed during the progressive period (1933-47), standardized objective tests were a great technical breakthrough, since they enabled the efficient and reliable testing of the knowledge accumulation of large numbers of students (Shavelson). They replaced essay tests, which were viewed as unreliable and far too costly because of the need for

large numbers of trained human graders to score them. They also demanded far too much time of the students taking them.[7]

But since the 1970s, many educators have objected to multiple-choice tests as overly focused on content knowledge and not enough on general intellectual skills, which academics increasingly value as the knowledge explosion makes it impossible for anyone to master the content of a field. At the same time, employers find such skills increasingly important in a fast-evolving economy where creativity and the capacity to learn new things trump content knowledge that quickly becomes out of date.

The Collegiate Learning Assessment is a performance-based instrument that tests active rather than passive knowledge by means of tasks that students perform. In that performance, they reveal their capacities to solve problems and write, two core skills identified by employers and two of the three named in National Education Goal 6 (B) (v).

Before the advent of sophisticated sampling and the new technologies, such a test would have been too costly, unreliable, and time-consuming for both test-takers and scorers to be feasible to administer to large numbers of students. Indeed, an earlier incarnation of the CLA, New Jersey's Tasks in Critical Thinking, languished on the shelves of ETS, the test's developer, because of those very drawbacks. But now the test is administered by computer to a small sample of students, each of whom completes only a single task, which reduces the cost of administration. It is scored by computer as well, without any reduction in reliability (the test developers claim), thus lowering the cost further. The Council on Aid to Education, which developed the test under the auspices of the RAND Corporation, can predict average scores on the CLA based on the test-takers' entering test scores. Deviations from the average expected score thus become a measure of how much value the college has (or has not) added to the students' learning above and beyond what might have been expected.

The promise of such developments is only now beginning to be felt, and there are still many obstacles to overcome. There are too few such tests in existence; they cover only a small subset of the intellectual skills faculty, business leaders, and policymakers alike

[7] Between 1928 and 1932, the Carnegie Foundation sponsored the "Pennsylvania Study," a large-scale assessment in which 70 percent of college seniors spent 12 hours taking a 3,200-item objective test (Shavelson). Meanwhile, the University of Chicago was known for its centralized University Examiner's Office, which developed, administered, and scored tests of student achievement in the university's general education program (Shavelson). Lee Shulman reports taking a nine-hour multiple-choice and essay test there on the history of western civilization. It is hard to believe that students today would tolerate such a lengthy examination.

expect college graduates to have mastered; and the problem of student motivation, both to take the test and to do well on it, remains very large. But if testing technology continues to develop, eventually a system of voluntary certification by such tests could replace the college degree as a warrant of a college graduate's skills and knowledge.

CERTIFICATION OF THE FUTURE

The fastest-growing credential offered in higher education is not the diploma or degree but the certificate (*Measuring Up 2006*). Not only do we have the traditional certifications in health and education—there is also a growing phenomenon of achievement-based, portable, and recognized certifications that allow their possessors to claim special expertise (Johnstone, Ewell, and Paulson, 2002). Indeed, in the field of information technology, a Microsoft certificate is arguably more advantageous for certain kinds of jobs than a degree. Clifford Adelman, in describing this credentialing system, calls it the "parallel postsecondary universe."

Achievement-based examinations are not confined to the technical fields. The set of Advanced Placement exams is perhaps the best-known example of a system to award competency-based credit for disciplinary knowledge, but many institutions allow students to test out of certain courses by taking the College Board College-Level Examination Program (CLEP) or award college credit for life experience (overseeing such exams is the mission of the Council for Adult and Experiential Learning, or CAEL). In a significant broadening of the concept, Western Governors University was structured around defined and validated competencies as the basis for the degree—students graduate only by passing the assessments associated with those competencies.

As testing technology improves and test developers make use of the new capacities to create instruments with greatly increased power to do nuanced assessments of actual performance, certifications could move into areas long identified by academics and businesspeople alike as crucial intellectual skills for the 21st century: not only the triumvirate of National Goal 6 (communication, problem-solving, and critical thinking) but others, such as domain-specific knowledge, information literacy, technological competence, and "soft" skills such as teamwork that have so far proven elusive to test developers.

When that day comes, we will be able to assess both the institutional effectiveness and educational capital questions by means of a direct assessment of student learning. Only

then will we be able to gauge the full value of the learning that colleges and universities generate.

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