LEAP

Making Progress?

WHAT WE KNOW ABOUT THE ACHIEVEMENT OF LIBERAL EDUCATION OUTCOMES

BY ASHLEY FINLEY

Association of American Colleges and Universities

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"I am because we are." — African Proverb

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— *Ashley Finley*

Preface

Since the 2005 publication of *Liberal Education Outcomes: A Preliminary Report on Student Achievement in College*, much has occurred in assessment in higher education. We now know more about how well students are faring in the achievement of liberal education outcomes across multiple measures of learning. We know more about the degree to which campuses nationwide are adopting outcomes-based frameworks as the basis for assessing and communicating student learning at their institutions. We also know more about the importance of attaining liberal education outcomes in today's economy from the perspective of employers. This publication both updates and goes beyond the 2005 publication in order to call attention to these new developments. Current data from national datasets have been provided alongside data from previous years in order to highlight patterns of change in student learning over time, as well as changes in faculty attitudes on the importance of liberal education outcomes and the incorporation of these outcomes into coursework.

This report also advances what we know about student progress on outcomes through the inclusion of new national studies. Data from the Wabash National Study of Liberal Arts Education, the Association of American Colleges and University's (AAC&U) Personal and Social Responsibility Inventory (now housed at Iowa State University), the Cooperative Institutional Research Program, and the Higher Education Research Institute's faculty survey provide a more comprehensive view of student learning gains across a spectrum of outcomes than was possible in 2005.[1] This picture is further developed by the inclusion of data on the degree to which faculty value and implement the outcomes of a liberal education. Current evidence is also provided on students' views of whether specific learning outcomes are essential to learning.

Taken together, the findings in this report signal the need to shift the national assessment effort from one of compliance and accountability to one of heightened determination to move the needle on demonstrated achievement. For, as *Making Progress?* shows, we have a high degree of consensus on learning outcomes that students really need to achieve and abundant evidence that too many students are falling short in relation to these outcomes.

But *Making Progress?* also gives us reasons for hope. As chapters 5 and 6 explain, higher education already has tools in hand both to significantly raise the quality of students' learning in college and also to make assessment itself one of the catalysts for achievement. The proof of what students are learning can now be gathered in e-portfolios and evaluated against nationally validated standards to see whether students really are achieving competence on expected learning outcomes. Students themselves, working with faculty, can join in the assessment of their own progress and proficiency. And we in higher education can see, far more holistically, whether students are in fact attaining the breadth and level of learning that a liberal education should provide. This new movement toward "direct" and "authentic assessment" is an exciting development that we should all work together to advance.

The fast-moving discussion of assessment in higher education demands that descriptive reports on outcomes attainment be only one part of the story of student success. Much of the rest of the story must necessarily focus on the educational environments—and the assessments of those environments—that are created to foster learning achievement. Discussions of both direct assessment of student work and high-impact practices enable the emphasis in this report to move from considering the question, *"How are we doing now?"* with regard to student learning to, *"How can we do better in the future?"*

— Ashley Finley and Carol Geary Schneider

INTRODUCTION

Liberal Education Outcomes

Growing Support for the Learning Every Student Needs

At the very beginning of the Liberal Education and America's Promise (LEAP) initiative, the Association of American Colleges and Universities (AAC&U) formed a National Leadership Council (NLC) comprising educational, business, community, and policy leaders to guide the initiative. Following two years of deliberation, the LEAP NLC issued an influential national report in 2007 called *College Learning for the New Global Century*.[2] In its report, the council argued that we must fulfill the promises of education for all students who aspire to college, especially those for whom higher education is a route, perhaps the only possible route, to a better future. Based on extensive input from both educators and employers, the recommendations in the report respond to the new global challenges students will face in their roles as citizens and as workers. The LEAP report describes the learning contemporary students need from college, and what it will take to help them achieve it.

At the core of the report is a recognition that every college graduate needs and deserves to reach high levels of achievement across a broad array of "Essential Learning Outcomes" (see fig. 1). The report notes that "in the twenty-first century, the world itself is setting very high expectations for knowledge and skill."[3] In this context, educators and employers have begun to reach similar conclusions—an emerging consensus—about the kinds of learning Americans need from college. The LEAP NLC also pointed out that "student success in college cannot be documented—as it usually is—only in terms of enrollment, persistence, and degree attainment." The report urges college leaders to work together with faculty and staff—"across courses and programs—to assess students' cumulative progress, to audit the connections between intended learning and student accomplishment, to share findings about effective educational practices, and to advance needed change."[4]

Since 2007, the consensus around the importance of the LEAP Essential Learning Outcomes has only strengthened in scope and intensity. Hundreds of individual colleges and several large state systems of higher education have adopted the LEAP Essential Learning Outcomes as a guiding framework to advance and assess students' cumulative learning in college. Research suggests that this framework coincides well with employer expectations. Between the time the 2007 report went to press and late 2009, AAC&U documented this consensus about the most important outcomes of a college education through a series of focus groups and national surveys. During this time, Hart Research Associates conducted for AAC&U several national surveys of employers, each of which revealed strong support for an increased emphasis on providing all students with the LEAP Essential Learning Outcomes.[5] Employers clearly believe that, to succeed in the global economy, students need more liberal education, not less. A majority of employers, in fact, think that colleges and universities should place more emphasis on fourteen different learning outcomes, all of which are developed through an engaged liberal education (see fig. 2).

FIGURE 1

The Essential Learning Outcomes

Beginning in school, and continuing at successively higher levels across their college studies, students should prepare for twenty-first-century challenges by gaining:

Knowledge of Human Cultures and the Physical and Natural World

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused *by engagement with big questions, both contemporary and enduring*

Intellectual and Practical Skills, including

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving

Practiced extensively*, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance*

Personal and Social Responsibility, including

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

Anchored *through active involvement with diverse communities and real-world challenges*

Integrative and Applied Learning, including

- Synthesis and advanced accomplishment across general and specialized studies

Demonstrated *through the application of knowledge, skills, and responsibilities to new settings and complex problems*

Note: This listing was developed through a multiyear dialogue with hundreds of colleges and universities about needed goals for student learning; analysis of a long series of recommendations and reports from the business community; and analysis of the accreditation requirements for engineering, business, nursing, and teacher education. The findings are documented in previous publications of the Association of American Colleges and Universities: *College Learning for the New Global Century* (2007) and *The LEAP Vision for Learning* (2011). For more information, see www.aacu.org/leap.

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FIGURE 2

Percentage of Employers Who Want Colleges to "Place More Emphasis" on Essential Learning Outcomes

Knowledge of Human Cultures and the Physical and Natural World

• Science and technology	70%
• Global issues	67%*
• The role of the United States in the world	57%
• Cultural diversity in the United States and other countries	57%
• Civic knowledge, participation, and engagement	52%*

Intellectual and Practical Skills

• Written and oral communication	89%
• Critical thinking and analytic reasoning	81%
• Complex problem solving	75%
• Teamwork skills in diverse groups	71%*
• Creativity and innovation	70%
• Information literacy	68%
• Quantitative reasoning	63%

Personal and Social Responsibility

• Ethical decision making	75%
• Intercultural competence (teamwork in diverse groups)	71%*
• Intercultural knowledge (global issues)	67%*
• Civic knowledge, participation, and engagement	52%*

Integrative and Applied Learning

• Applied knowledge in real-world settings	79%

Note: These findings are taken from *Raising the Bar: Employers' Views on College Learning in the Wake of the Economic Downturn,* a survey of employers conducted for AAC&U by Hart Research Associates and published in 2010. For a full report on this survey and related employer findings, see www.aacu.org/leap.

*Starred items are shown in multiple learning outcome categories because they apply to more than one.

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Assessing Liberal Education Outcomes: More Emerging Consensus

In AAC&U's 2008 survey, employers dismissed multiple-choice tests in favor of assessments that evaluate students' communication and analytical reasoning skills and their ability to apply what they are learning to complex problems. For example, more than two-thirds of the employers surveyed believe that a faculty supervisor's assessment of a student's internship or community-based project would be very or fairly useful to them in evaluating that student's potential for success. More than half would find it useful also to see individual scores on essay tests of problem-solving, writing, and analytical thinking skills.

In addition to the surveys of employers, AAC&U released findings in 2009 from a national survey of chief academic officers at AAC&U member institutions.[6] This study revealed that nearly 80 percent of the colleges and universities surveyed had a broad set of learning outcomes for all students that echo those advanced in the LEAP initiative and embraced by employers.

The 2009 survey also confirmed that colleges and universities are increasing their efforts to assess students' achievement of college-wide learning outcomes. More than seven in ten institutional leaders who responded to our survey (72 percent) reported that they were assessing learning outcomes across the curriculum, and an additional one in four (24 percent) said they were planning to do so. Most colleges and universities assess cumulative learning outcomes at the departmental level rather than in general education. Nonetheless, nearly half (48 percent) of the institutions we surveyed were assessing at both the departmental level and in general education. Fully 94 percent either were already assessing (52 percent) or planned to assess (42 percent) general education learning outcomes across multiple courses.

Educators and employers agree that all students must achieve the broad outcomes of an engaged liberal education—and that we need to learn much more about not only what students know, but also how well they can apply their knowledge in real-world settings. While *Making Progress?* highlights much more assessment data than was available when AAC&U first launched the LEAP initiative, it also shows that the work of determining whether students are learning enough is far from finished. We must continue to develop more effective ways to assess students' achievement of all the Essential Learning Outcomes. Only then will we be able to confidently send graduates into the world prepared to meet new challenges and to help build a more equitable, sustainable, and productive society.

— *Debra Humphreys*

CHAPTER 1

How Do Students See Their Progress?

A Comparison of Students' Self-Reports on Learning Outcomes over Time

To illustrate the degree to which students believe they are improving, staying the same, or declining on selected learning outcomes over time, table 1 provides a comparison of 2004 and 2010 data from the National Survey of Student Engagement (NSSE).[7]

Table 1 indicates that in both 2004 and 2010, seniors consistently rated their level of competence on outcomes as high. The vast majority of senior students believe the experience they have received at their institution has contributed either "quite a bit" or "very much" to outcomes related to knowledge, intellectual and practical skills, and integrative and applied learning. There is some departure from these high marks for particular outcomes related to personal and social responsibility (i.e., "contributing to the welfare of your community," voting behavior, and "understanding people of different racial or ethnic backgrounds"). However, while seniors do not tend to perceive that their college experience has contributed quite *as much* to their development in areas related to personal and social responsibility as to other learning outcomes, there is still fairly high consensus that even these outcomes are being achieved.

Comparison data on learning outcomes from the 2005 and 2010 Cooperative Institutional Research Program's (CIRP) College Senior Survey (CSS) results also demonstrate high levels of reported outcome attainment over time (see Appendix).[8] Across the thirteen outcomes compared in NSSE, the average percentage increase on outcomes over time was 3.2 percent. Across the seventeen outcomes compared in the CSS, the average percentage increase over time was 7.5 percent. In part, the higher CSS average percentage change in outcomes was due to a large increase in the percentage of seniors who believed that their "knowledge of a particular field or discipline" had gotten "much stronger" since they entered college (59.5 percent in 2005 vs. 72.5 percent in 2010), and in the percentage of seniors who reported that they had voted in a student election (23.6 percent in 2005 vs. 67.7 percent in 2010). Notably, although both NSSE and the CSS hold great utility for campus assessment of student learning, these instruments do not measure learning outcomes in exactly the same way. When gathering summative evidence of student learning, care should be taken to compare outcomes across institutional assessments in order to understand patterns of change and growth fully.

Additional national information on how students are faring on learning outcomes has emerged from the Wabash National Study of Liberal Arts Education. Though the scope of this study is smaller than that of NSSE and CIRP research in terms of the number of institutions and students included, the findings are based upon a representative sample of both campuses and students and address a range of outcomes. Table 2 presents a summary of change in students' perceived and demonstrated learning (with regard to critical thinking and ethical reasoning) over four years (2006–2010). Baseline data were gathered from a sample of first-year students in 2006 and then again from the same students in 2010. The overall percentage of growth in learning outcomes from first year to senior year for these students is presented in table 2.

TABLE 1. Learning Outcomes Comparison—National Survey of Student Engagement (NSSE)

LIBERAL EDUCATION OUTCOME	NSSE Senior Year 2004[9] *To what extent has your experience at your institution contributed to your knowledge, skills, and personal development in the following areas?*	NSSE Senior Year 2010[10] *To what extent has your experience at your institution contributed to your knowledge, skills, and personal development in the following areas?*
KNOWLEDGE[11]	■ *Acquiring a broad general education:* Very much 49% • Quite a bit 37%	■ *Acquiring a broad general education:* Very much 47% • Quite a bit 37%
INTELLECTUAL AND PRACTICAL SKILLS		
Inquiry and analysis **Critical thinking**	■ *Thinking critically and analytically:* Very much 51% • Quite a bit 36%	■ *Thinking critically and analytically:* Very much 52% • Quite a bit 35%
Written and oral communication	■ *Writing clearly and effectively:* Very much 38% • Quite a bit 39%	■ *Writing clearly and effectively:* Very much 40% • Quite a bit 38%
	■ *Speaking clearly and effectively:* Very much 33% • Quite a bit 39%	■ *Speaking clearly and effectively:* Very much 36% • Quite a bit 37%
Quantitative literacy	■ *Analyzing quantitative problems:* Very much 28% • Quite a bit 37%	■ *Analyzing quantitative problems:* Very much 40% • Quite a bit 36%
Information literacy	■ *Using computing and information technology:* Very much 41% • Quite a bit 36%	■ *Using computing and information technology:* Very much 46% • Quite a bit 34%
Teamwork and problem solving	■ *Working effectively with others:* Very much 39% • Quite a bit 39%	■ *Working effectively with others:* Very much 44% • Quite a bit 36%
PERSONAL AND SOCIAL RESPONSIBILITY		
Civic knowledge and engagement–local and global	■ *Contributing to the welfare of your community:* Very much 18% • Quite a bit 27%	■ *Contributing to the welfare of your community:* Very much 21% • Quite a bit 28%
	■ *Voting in local, state, or national elections:* Very much 9% • Quite a bit 14%	■ *Voting in local, state, or national elections:* Very much 14% • Quite a bit 19%
Intercultural knowledge and competence	■ *Understanding people of other racial and ethnic backgrounds:* Very much 21% • Quite a bit 30%	■ *Understanding people of other racial and ethnic backgrounds:* Very much 25% • Quite a bit 32%
Ethical reasoning and action	■ *Developing a personal code of values and ethics:* Very much 28% • Quite a bit 31%	■ *Developing a personal code of values and ethics:* Very much 30% • Quite a bit 31%
Foundations and skills for lifelong learning	■ *Learning effectively on your own:* Very much 37% • Quite a bit 40%	■ *Learning effectively on your own:* Very much 36% • Quite a bit 39%
INTEGRATIVE AND APPLIED LEARNING		
Synthesis and advanced accomplishment across general and specialized studies	■ *Put together ideas or concepts from different courses when completing assignments:* Very often 24% • Often 42%	■ *Put together ideas or concepts from different courses when completing assignments:* Very often 28% • Often 42%
	■ *Worked on a paper or project that required integrating ideas:* Very often 49% • Often 38%	■ *Worked on a paper or project that required integrating ideas:* Very often 50% • Often 37%

TABLE 2. Four-Year Change Summary—Wabash National Study[12]

LIBERAL EDUCATION OUTCOME	Wabash National Study *Percentage of students who showed moderate to high growth/ small growth/ no growth or decline over four years of college:*
KNOWLEDGE	▪ *Academic motivation:* Moderate to high growth **27%** • Small growth **7%** • No growth or decline **66%**
Sciences	▪ *Contribution to the sciences:* Moderate to high growth **21%** • Small growth **0%** • No growth or decline **79%**
Arts	▪ *Contribution to the arts and humanities:* Moderate to high growth **26%** • Small growth **0%** • No growth or decline **74%**
INTELLECTUAL AND PRACTICAL SKILLS	
Critical thinking	▪ *Critical thinking:* [13] Moderate to high growth **57%** • Small growth **13%** • No growth or decline **30%** ▪ *Need for cognition:* Moderate to high growth **49%** • Small growth **14%** • No growth or decline **37%**
Written and oral communication	▪ *Positive attitude toward literacy:* Moderate to high growth **36%** • Small growth **11%** • No growth or decline **53%**
PERSONAL AND SOCIAL RESPONSIBILITY	
Civic knowledge and engagement–local and global	▪ *Socially responsible leadership:* Moderate to high growth **52%** • Small growth **13%** • No growth or decline **35%** ▪ *Political and social involvement:* Moderate to high growth **35%** • Small growth **7%** • No growth or decline **58%**
Intercultural knowledge and competence	▪ *Universality-diversity awareness:* Moderate to high growth **42%** • Small growth **11%** • No growth or decline **46%** ▪ *Openness to diversity and challenge:* Moderate to high growth **31%** • Small growth **8%** • No growth or decline **61%**
Ethical reasoning and action	▪ *Moral reasoning:* [14] Moderate to high growth **62%** • Small growth **11%** • No growth or decline **27%**

The findings presented in table 2 indicate that for six of the eleven learning outcomes measured by the Wabash study, the majority of students showed either "no growth or a decline" over four years. Slightly less than a majority of students showed no growth or a decline over four years with regard to their diversity awareness compared to those who showed "moderate to high growth" (46 percent vs. 42 percent, respectively). The table indicates a number of small average increases in learning over time, but as a whole, the Wabash National Study found that students experienced little or no growth on outcomes.

The summative message across tables 1 and 2 is one of stagnation. Based on evidence drawn almost entirely from students' self-reports, little change is occurring in students' perceived gains over time, as seen in table 1. Though students' perceptions of their own attainment have remained high for most outcomes, the data in table 1 raise questions as to whether *perceived* gains match *actual* improvement. The lack of alignment between student self-perception of learning and their actual performance based on individual work is addressed more fully in Chapter 3.

Data from the NSSE and Wabash surveys also indicate that little ground has been gained in students' development on outcomes related to personal and social responsibility. This is true both over time and in comparison with other types of learning outcomes, as evidenced by the low percentages of students showing gains on these outcomes from first to senior years (Wabash) and the comparatively low percentages of students responding they agree either "very much" or "quite a bit" that they have experienced growth on these outcomes relative to other indicators of learning (NSSE). Outcomes associated with the development of students' sense of personal and social responsibility are more fully examined in Chapter 2.

CHAPTER 2

Does College Foster Civic Learning?

Changes in Personal and Social Responsibility Outcomes

Essential to the goal of achieving a liberal education is students' engagement in experiences and real-world applications of learning specifically intended to prepare them to be active and informed citizens. However, outcomes related to these skills tend to be among the most underdeveloped, undercommunicated, and underassessed student learning outcomes. The lack of visibility and ownership of personal and social responsibility on campuses has garnered an "orphaned" status for these outcomes, particularly relative to more commonly embraced outcomes, such as writing abilities and critical thinking. Yet, arguably, these "orphaned" outcomes embody the essential interpersonal and reflective skills students need in order to fully apply and contextualize their learning in a diverse, globally connected, and technological world.

As seen in table 1 in the previous chapter, a comparison of National Survey of Student Engagement (NSSE) data from 2004 and 2010 shows that, overall, students have made gains with regard to their perceived attainment of certain outcomes associated with personal and social responsibility over time. In particular, notable increases are seen in the percentages of seniors who report experiences "contributing to the welfare of (their) community" and voting in "local, state, or national elections" either "very much" or "quite a bit." Students reported moderate to high growth on two of the five scales used in the Wabash National Study of Liberal Arts Education to measure personal and social responsibility outcomes over four years—socially responsible leadership and moral reasoning (see table 2 in previous chapter). To further illustrate gains on indicators of personal and social responsibility over time, table 3 provides additional data from the Cooperative Institutional Research Program's (CIRP) College Senior Survey.

Both NSSE and CIRP comparison data indicate gains for seniors over time on these personal and social responsibility outcomes. With regard to civic knowledge and engagement, a much higher percentage of seniors reported being engaged either "frequently or occasionally" in "community service as a part of class" and voting in a student election in 2010 than in 2005 (increases of 9.9 percent and 44.1 percent, respectively). Smaller but still important increases were also demonstrated in students' self-rated changes regarding understanding community problems and performing volunteer work. There was also a 6.1 percent increase in the 2010 percentage of seniors who reported having "much stronger" "knowledge of people from different races/cultures" since entering college.

In addition to widely used instruments like the CIRP survey and NSSE, the new Personal and Social Responsibility Inventory (PSRI) can be used to obtain data on student gains on outcomes related to personal and social responsibility (see table 4). The PSRI was developed to address two campus assessment goals: (1) to examine students' perceived developmental growth on personal and social responsibility outcomes by comparing first-year attitudes with those of seniors, and (2) to assess the institutional climate for achieving these outcomes from the vantage point of campus stakeholders other than students: faculty, academic administrators, and student affairs professionals.[15] Table 4 compares students' own perceived growth on personal and social responsibility outcomes over time (see bolded comparison items within categories) with the perceptions of student gains from other campus stakeholders. (The wording used in

TABLE 3. Personal and Social Responsibility Comparison Data—CIRP College Senior Survey [16]

LIBERAL EDUCATION OUTCOME	College Senior Survey 2005[17]	College Senior Survey 2010[18]
PERSONAL AND SOCIAL RESPONSIBILITY		
Civic knowledge and engagement–local and global	*Self-rated change since entering college in understanding of global issues:* Much stronger **26.1%**	*Self-rated change since entering college in understanding of global issues:* Much stronger **28.2%**
	Since entering college have you frequently or occasionally performed community service as part of a class? Yes **49.3%**	*Since entering college have you frequently or occasionally performed community service as part of a class?* Yes **59.2%**
	Since entering college have you frequently or occasionally worked on a local, state, or national campaign? Yes **10.9%**	*Since entering college have you frequently or occasionally worked on a local, state, or national campaign?* Yes **12.2%**
	Since entering college have you frequently or occasionally voted in a student election? Yes **23.6%**	*Since entering college have you frequently or occasionally voted in a student election?* Yes **67.7%**
	Self-rated change since entering college in understanding of the problems facing your community: Much stronger **19.5%**	*Self-rated change since entering college in understanding of the problems facing your community:* Much stronger **24.9%**
	During the past year have you performed volunteer work? Yes **67.0%**	*How often in the past year have you performed volunteer or community service work?* Frequently **18.0%** • Occasionally **54.0%** • Not at all **28.0%**
Intercultural knowledge and competence	*Self-rated change since entering college in knowledge of people from different races/cultures:* Much stronger **21.0%**	*Self-rated change since entering college in knowledge of people from different races/cultures:* Much stronger **27.1%**

surveys to faculty, administrators, and student affairs professionals is provided in italics.) Additional items in the categories of "civic knowledge and engagement" and "ethical reasoning and action" signify attitudes regarding the institutional climate for achieving particular personal and social responsibility outcomes.[19] These data were gathered in 2007 from a sample of twenty-four thousand students across twenty-three colleges and universities. The sample divided almost evenly over the four years of college.

A striking trend emerges when looking at the bolded comparison items in table 4 indicating students' perceived developmental growth on outcomes over time. When asked about particular outcomes related to intercultural knowledge and ethical reasoning at the time they "came to college," over 60 percent of

students agreed strongly that they entered college with a capacity for these outcomes. Slightly less than 50 percent of students said they "strongly agree" that they entered college with an awareness of the importance of contributing to the greater good through community involvement. Despite these entering percentages, however, in each case a *smaller* percentage of students strongly agreed that being in college contributed to an increase in their capacities on these outcomes. On average, there was a thirteen point difference between the percentage of students who "strongly agree" that since being in college they have "expanded" their civic, intercultural, or ethical capacities and the percentage of students who believed they possessed these capacities on first entering college.

Additionally, table 4 demonstrates that the perceptions of students can differ dramatically from those of other campus stakeholders. For example, far fewer faculty, administrators, and student affairs professionals than students believe that "students are respectful of diverse perspectives," regardless of whether students are entering or have been in college. There is also a divergence in opinions regarding students' sense of "personal and academic integrity." This multi-constituency approach to assessing learning highlights how much institutions can learn when a range of perspectives are included. The inclusion of multiple viewpoints can be a vital assessment strategy for bridging campus silos where similar learning outcomes may be targeted, but where the integration of efforts may be underdeveloped.

Overall, a full understanding of the degree to which students' perceptions of their learning with regard to outcomes often tagged as "orphaned" is still unfolding. Table 3 highlights that when one looks at samples of seniors over time, more seniors appear to be making gains on particular personal and social responsibility outcomes compared to an earlier cohort of seniors. It is also the case, however, that time has done little to change the finding that seniors consistently indicate that their college experiences contribute less to these outcomes than to other outcomes, such as critical thinking or writing (see tables 1 and 3). Moreover, data from the 2007 administration of the PSRI (table 4) suggest that when comparing students' perceptions of outcomes upon entering college with perceived gains made during college, many students may actually be regressing. Considering other campus stakeholders' perceptions of the institutional climate for personal and social responsibility, it may be no wonder that student capacities in these areas are not being fully realized. Both small and large differences between students' perceptions and those of other campus stakeholders suggest that issues of institutional transparency, communication, and alignment related to civic learning may be impeding growth. Finally, tables 1, 2, 3, and 4 all demonstrate that the scope of data on student achievement of personal and social responsibility outcomes obtained through the use of national instruments is relatively limited.[20] There is a dearth of information, in particular, on indicators pertaining to students' ethical and moral development and development of lifelong learning skills. A more comprehensive assessment of personal and social responsibility outcomes might also include the assessment of skills more closely associated with citizenship, civic participation, and engagement in participatory democracy, such as collaborative problem solving, deliberative dialogue, and engaging in pluralism.[21]

TABLE 4. Personal and Social Responsibility Inventory

	PSRI Survey Item[22] *(faculty/staff prompts indicated in italics)*	Percentage Reporting "Strongly Agree"			
PERSONAL AND SOCIAL RESPONSIBILITY		Students	Faculty	Academic Administrators	Student Affairs Professionals
Civic knowledge and engagement–local and global [23]	I came to college aware of the importance of contributing to the greater good through my community involvement.	33%	N/A	N/A	N/A
	This campus has helped me expand my own awareness of the importance of being involved in the community and contributing to the greater good. *[Students usually have a stronger awareness of the importance of being involved in the community and contributing to the greater good at the end of their time on campus than they had at the beginning of college.]*	46%	42%	50%	N/A
	Contributing to a larger community is a responsibility that this campus values and promotes. (Strongly Agree)	45%	50%	55%	52%
Intercultural knowledge and competence [24]	I respected perspectives different from my own when I first came to college. *[Students here are respectful of diverse perspectives when they first come to college.]*	63%	7%	7%	6%
	I have developed an increased ability to learn from diverse perspectives during the time I have been in college. *[Students usually have an increased capacity to learn from diverse perspectives at graduation than they had at the beginning of college.]*	53%	40%	45%	36%
Ethical reasoning and action[25]	I came to college with a well-developed capacity for moral and ethical reasoning.	62%[26]	N/A	N/A	N/A
	I have expanded my capacity for ethical and moral reasoning since I have been in college.	47%	N/A	N/A	N/A
	Students on this campus conduct themselves with respect for others.	27%	27%	27%	18%
	Students know they are responsible for personal and academic integrity.	58%	40%	42%	36%

CHAPTER 3

Does Believing Equal Doing?

The Space between Self-Perceptions and Performance

The data presented in the preceding chapters are essential for understanding student learning on campuses. However, this evidence comes with an important caveat: it is almost entirely indirect, meaning that it is based on students' own assessments of their gains on different aspects of college learning.

While it is necessary for campuses to capture and be accountable for the ways in which students *perceive* their learning, the full story of student learning cannot be told with these data alone. Direct assessment of evidence from student work is necessary to capture students' actual capabilities with regard to learning across outcomes. In addition to national surveys that gather indirect evidence of student learning, there are a few national standardized assessments that utilize direct evidence from student tests to gauge achievement on a limited range of learning outcomes. The available national studies show a significant gap between students' self-reported gains and their proficiency on tests of competence.

A comparison of data from the Educational Testing Service (ETS) Proficiency Profile[27] (table 5) and data from ACT's Collegiate Assessment of Academic Proficiency (CAAP) (table 6) demonstrates the degree to which students have reached levels of proficiency on certain outcomes over time. Both sets of data were obtained through the assessment of students' written responses to prompts and structured essay assignments. The data from the ETS Proficiency Profile show the percentages of both first-year students and seniors who scored as proficient in mathematics, critical thinking, writing, and reading. For both first-year and senior data in table 5, percentages represent average levels of proficiency based on aggregate data from 2006 through 2011.[28] The CAAP data (table 6) show the degree to which students' performance on these same outcomes has changed over time for seniors only.[29]

Overwhelmingly, the ETS data indicate that the majority of students, first-years and seniors, are not proficient in mathematics, critical thinking, writing, or reading. Although fewer seniors scored as not proficient compared to first-year students, this is small consolation when, on average, three-fourths of first-year students and nearly three-fifths of seniors scored as not proficient on these outcomes from 2006 through 2011. Findings from CAAP parallel those of the ETS Proficiency Profile. Between 2004 and 2010, assessments indicate seniors' skill levels with regard to mathematics, critical thinking, writing, and reading all declined. Additionally, the scores reported in CAAP tests are scored using a standardized scale ranging from 40 to 80, with an average score of 60. Thus, in both 2004 and 2010, seniors scored below average in mathematics and only slightly above the average on the other learning outcomes assessed.

TABLE 5. Average Levels of Outcomes Proficiency—ETS Proficiency Profile

LIBERAL EDUCATION OUTCOME	Freshman Proficiency Profile[30] 2006-11	Senior Proficiency Profile[31] 2006-11
KNOWLEDGE		
Mathematics	*Mathematics, level 3:* Proficient 5% • Marginal 11% • Not proficient 84%	*Mathematics, level 3:* Proficient 10% • Marginal 18% • Not proficient 73%
INTELLECTUAL AND PRACTICAL SKILLS		
Critical thinking	*Critical thinking:* Proficient 3% • Marginal 10% • Not proficient 86%	*Critical thinking:* Proficient 8% • Marginal 20% • Not proficient 72%
Written communication	*Writing, level 3:* Proficient 5% • Marginal 19% • Not proficient 77%	*Writing, level 3:* Proficient 9% • Marginal 28% • Not proficient 63%
	Reading, level 2: Proficient 24% • Marginal 16% • Not proficient 60%	*Reading, level 2:* Proficient 41% • Marginal 19% • Not proficient 40%

Are Students "Adrift," Disillusioned, or Both?

Like the ETS Proficiency Profile and CAAP, the Collegiate Learning Assessment (CLA) has been determined to be a valid measure of students' critical thinking and writing skills.[32] Though data from the CLA are not included in this report, the CLA itself has been the subject of much recent discussion. In their book *Academically Adrift*, Richard Arum and Josipa Roksa use findings from the CLA to show that significant proportions of students have made few, if any, gains in critical thinking, complex reasoning, and written communication while in college.[33] Using national data from sources other than the CLA, subsequent replications of Arum and Roksa's study have provided further evidence of low student attainment.[34] The data presented here in tables 5 and 6 support the well-publicized and grim picture of students' actual learning achievement in higher education.

What is missing from *Academically Adrift* and the replication studies, however, is any presentation of the incongruence between students' optimistic perceptions of their learning attainment and the dismal rates with which they are able to actually demonstrate those gains. As shown in Chapter 2, students tend to rate

TABLE 6. Comparison of Senior-Year Change over Time—Collegiate Assessment of Academic Proficiency (CAAP)

LIBERAL EDUCATION OUTCOME	CAAP Seniors 2004[35] Scale Range=40–80	CAAP Seniors 2010[36] Scale Range=40–80	Change
KNOWLEDGE			
Mathematics	■ Mathematics: 57.3/80	■ Mathematics: 56.8/80	-0.05
INTELLECTUAL AND PRACTICAL SKILLS			
Critical thinking	■ Critical thinking: 63.7/80	■ Critical thinking: 62.9/80	-0.8
Written communication	■ Writing skills: 64.1/80	■ Writing skills: 63.2/80	-0.9
	■ Reading skills: 63.0/80	■ Reading skills: 62.1/80	-0.9

themselves highly on many of the same measures for which direct evidence indicates otherwise. Additionally, the scope of indicators presented in this report further suggests that students are adrift with regard to more than math, critical thinking, writing, and reading. By their own admission, many students also are largely deficient on outcomes related to personal and social responsibility.

Is a culture of apathy or low expectations to blame for the crisis in attainment? Perhaps the issue is that students and faculty simply do not consider these learning outcomes of a liberal education to be important? Chapter 4 presents data on the degree to which faculty and students support liberal education outcomes and the degree to which faculty attitudes toward these outcomes align with their classroom and scholarly practice.

CHAPTER 4

Values and Learning Outcomes

The Role of Faculty Intentions and Student Aspirations

Important to the exploration of student success in achieving liberal education outcomes is the degree to which faculty and students attest to the value of these outcomes. Faculty attitudes play a particularly significant role in shaping students' aspirations and can powerfully influence students' efforts to realize their learning potential. The tables in this chapter present changes in faculty attitudes and practice over time (table 7), a comparison of the degree to which faculty attitudes match practice (table 8), and students' attitudes toward the importance of achieving liberal education outcomes (table 9).

Data from the Faculty Survey of Student Engagement (FSSE) (table 7) suggest that, like students' perceptions of their own learning, faculty attitudes regarding the importance of learning outcomes for undergraduate education are relatively stable over time. However, a handful of changes between 2004 and 2010 reflect the growing importance faculty place on undergraduates improving their written and oral communication and teamwork. The data also show a significant increase in faculty support for student engagement in community or service work and for institutions to encourage interaction among students from diverse backgrounds. Support for this latter finding is further evidenced by the increase in the percentage of faculty who reported that they structure their courses in such a way that students are given opportunities to develop an understanding of others from different racial or ethnic backgrounds. Nevertheless, the level of support among faculty for outcomes associated with students' development of personal and social responsibility as being "important" or "very important" hovers around fifty percent—far lower than for most other outcomes. If these outcomes truly are priorities for campuses, a greater majority of faculty will need to attest to their importance.

Using data from the Higher Education Research Institute (HERI) Faculty Study, table 8 provides a brief comparison of the degree to which faculty value liberal education outcomes as goals for student learning in relation to the incorporation of these values into their own practice as educators and scholars.[37] There is strong alignment between the value faculty place on writing skills and the frequency with which they encourage students to revise papers. Also notable is the high degree to which faculty attitudes regarding the need for students to develop ethical capacities matches their attitudes toward working in accordance with their own values. Conversely, though a majority of faculty tend to believe that indicators related to civic engagement and intercultural competence are "essential" or "very important" for undergraduate education, far fewer faculty engage in activities that promote these outcomes either in the classroom or in their scholarship. Additionally, although faculty tend to rate integrative skills as very important for students, relatively few faculty have taught an interdisciplinary course while slightly more than half engage in interdisciplinary scholarship.

TABLE 7. Faculty Emphasis on Liberal Education Outcomes over Time—Faculty Survey of Student Engagement (FSSE)

LIBERAL EDUCATION OUTCOME	Faculty Support for Outcomes in 2004[38] *Percent of faculty reporting that they structure a course so that students learn and develop in the following areas "Very much" or "Quite a bit"*	Faculty Support for Outcomes in 2010[39] *Percent of faculty reporting that they structure a course so that students learn and develop in the following areas "Very much" or "Quite a bit"*
INTELLECTUAL AND PRACTICAL SKILLS		
Inquiry and analysis **Critical thinking**	*Thinking critically and analytically:* Very much 63% • Quite a bit 30%	*Thinking critically and analytically:* Very much 67% • Quite a bit 27%
Written and oral communication	*Writing clearly and effectively:* Very much 34% • Quite a bit 27% *Speaking clearly and effectively:* Very much 23% • Quite a bit 26%	*Writing clearly and effectively:* Very much 41% • Quite a bit 26% *Speaking clearly and effectively:* Very much 27% • Quite a bit 27%
Quantitative literacy	*Analyzing quantitative problems:* Very much 27% • Quite a bit 17%	*Analyzing quantitative problems:* Very much 30% • Quite a bit 17%
Information literacy	*Percent of faculty reporting their institutions encourage students to use computers in their academic work:* Very much 57% • Quite a bit 34%	*Percent of faculty reporting their institutions encourage students to use computers in their academic work:* Very much 60% • Quite a bit 29%
Teamwork and problem solving	*Working effectively with others:* Very much 28% • Quite a bit 27%	*Working effectively with others:* Very much 32% • Quite a bit 28%
PERSONAL AND SOCIAL RESPONSIBILITY		
Civic knowledge and engagement–local and global	*How important is it to you that undergraduates at your institution do community service or volunteer work?* Very important 21% • Important 33%	*How important is it to you that undergraduates at your institution do community service or volunteer work?* Very important 28% • Important 37%
Intercultural knowledge and competence	*How important is it to you that undergraduates at your institution study abroad?* Very important 19% • Important 26% *To what extent do you structure your course so that students develop an understanding people of other racial and ethnic backgrounds?* Very much 21% • Quite a bit 20% *To what extent does your institution encourage contact among students from different economic, social and racial or ethnic backgrounds?* Very much 16% • Quite a bit 28%	*How important is it to you that undergraduates at your institution study abroad?* Very important 17% • Important 26% *To what extent do you structure your course so that students develop an understanding people of other racial and ethnic backgrounds?* Very much 26% • Quite a bit 22% *To what extent does your institution encourage contact among students from different economic, social and racial or ethnic backgrounds?* Very important 23% • Important 32%
Ethical reasoning and action	*To what extent do you structure your course so that students develop a personal code of values and ethics?* Very much 24% • Quite a bit 26% *To what extent do you structure your course so that students learn to understand themselves?* Very much 25% • Quite a bit 26%	*To what extent do you structure your course so that students develop a personal code of values and ethics?* Very much 28% • Quite a bit 26% *To what extent do you structure your course so that students learn to understand themselves?* Very much 30% • Quite a bit 26%
INTEGRATIVE AND APPLIED LEARNING		
Synthesis and advanced accomplishment across general and specialized studies	*How much emphasis do you place on engaging students in synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships?* Very much 49% • Quite a bit 36%	*How much emphasis do you place on engaging students in synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships?* Very much 53% • Quite a bit 34%

TABLE 8. Faculty Attitudes vs. Faculty Practice—HERI Faculty Survey (2010)[40]

LIBERAL EDUCATION OUTCOME	Faculty Attitudes *Indicate the importance of the following education goals for undergraduate students:*	Faculty Practice *Faculty asked to indicate how often they do the following:*
INTELLECTUAL AND PRACTICAL SKILLS		
Written communication	▪ *Promote ability to write effectively:* Essential 63.3% • Very important 34.2%	▪ *In your interactions with undergraduates, how often do you encourage them to revise their papers to improve their writing?* Frequently 70.9% • Occasionally 22.8%
PERSONAL AND SOCIAL RESPONSIBILITY		
Civic knowledge and engagement–local and global	▪ *Instill in students a commitment to community service:* Essential 15.2% • Very important 26.6% ▪ *Colleges should encourage students to be involved in community service activities:* Agree strongly 39.2% • Agree somewhat 49.4%	▪ *In how many of the courses that you teach do you use community service as part of coursework?* All 0% • Most 3.8% • Some 13.9% • None 82.3% ▪ *Taught a service learning course:* Yes 12.7% ▪ *Advised student groups involved in service/ volunteer work:* Yes 38.0%
Intercultural knowledge and competence	▪ *Enhance students' knowledge of and appreciation for other racial/ethnic groups:* Essential 43% • Very important 32.9% ▪ *Teach students tolerance and respect for different beliefs:* Essential 48.1% • Very important 30.4% ▪ *Goal of faculty member: Help promote racial understanding:* Essential 41.0% • Very important 29.5%	▪ *Conducted research or writing focused on racial or ethnic minorities:* Yes 21.5%
Ethical reasoning and action	▪ *Develop moral character:* Essential 34.2% • Very important 36.7% ▪ *Helping others who are in difficulty:* Essential 34.6% • Very important 43.6% ▪ *Develop a meaningful philosophy of life:* Essential 51.3% • Very important 29.5%	▪ *Experience close alignment between your work and your personal values:* To a great extent 68.4% • To some extent 30.4% • Not at all 1.3%
INTEGRATIVE AND APPLIED LEARNING[41]		
Synthesis and advanced accomplishment across general and specialized studies	▪ *Your students work on a paper or project that requires integrating ideas or information from various sources:* Very important 52% • Important 26% ▪ *Your students put together ideas or concepts from different courses when completing assignments or during class discussions:* Very important 28% • Important 33%	▪ *In your interactions with undergraduates, how often do you encourage them to integrate skills and knowledge from different sources and experiences?* Frequently 81% • Occasionally 17.7% • Not at all 1.3% ▪ *Taught an interdisciplinary course:* Yes 38.0% ▪ *Engaged in academic research that spans multiple disciplines:* Yes 55.7%

Table 9 illustrates the relative stability of seniors' attitudes toward the importance of liberal education outcomes over time. Only modest changes occurred in the attitudes of seniors between 2005 and 2010. On just two indicators, "participating in a community action program" and "developing a meaningful philosophy of life," did seniors' assessment of the importance of these outcomes change by more than 5 percent. It is most notable, however, that a consistently small percentage of seniors reported the bulk of these outcomes to be either "essential" or "very important" to their education. Even so, given the number of missing data

points in table 9 across outcomes related to knowledge areas, intellectual and practical skills, and integrative learning, it is difficult to know exactly how students view the majority of liberal education outcomes. Campus leaders often worry that their students are not aware of institutional learning outcomes. Perhaps as much, or more, concern should be placed on the degree to which students understand the importance of these outcomes to their education and to their lives beyond graduation.

TABLE 9. Student Attitudes toward the Importance of Outcomes—College Senior Survey

LIBERAL EDUCATION OUTCOME	College Senior Survey 2005[42] *Percentage of students indicating the following are "essential" or "very important" to them personally*	College Senior Survey 2010[43] *Percentage of students indicating the following are "essential" or "very important" to them personally*
KNOWLEDGE		
Sciences	*Making a theoretical contribution to science:* 16.9%	*Making a theoretical contribution to science:* 20.0%
Arts	*Creating artistic works (painting, sculpture, etc.):* 20.0%	*Creating artistic works (painting, sculpture, etc.):* 21.4%
	Becoming accomplished in one of the performing arts (acting, dancing, etc.): 17.3%	*Becoming accomplished in one of the performing arts (acting, dancing, etc.):* 20.8%
	Writing original works (poems, novels, etc.): 20.1%	*Writing original works (poems, novels, etc.):* 22.5%
INTELLECTUAL AND PRACTICAL SKILLS		
Written and oral communication	*No data available*	*No data available*
PERSONAL AND SOCIAL RESPONSIBILITY		
Civic knowledge and engagement–local and global	*Influencing the political structure:* 25.3%	*Influencing the political structure:* 25.7%
	Becoming a community leader: 39.1%	*Becoming a community leader:* 43.8%
	Participating in a community action program: 33.0%	*Participating in a community action program:* 41.9%
	Influencing social values: 50.6%	*Influencing social values:* 54.6%
Intercultural knowledge and competence	*Helping to promote racial understanding:* 39.4%	*Helping to promote racial understanding:* 41.3%
Ethical reasoning and action	*Developing a meaningful philosophy of life:* 56.4%	*Developing a meaningful philosophy of life:* 63.8%
	Helping others who are in difficulty: 75.8%	*Helping others who are in difficulty:* 80.1%

CHAPTER 5

Raising Student Achievement

Promising Practices for Improving Learning Outcomes

To this point, the data have illustrated where we've been and where we are now with regard to student learning outcomes. For the vast majority of people concerned about higher education—students, faculty, staff, administrators, college presidents, not to mention parents—the story presented in those pages is likely not the story they want to tell or hear about student learning. Yet, these are simply the data that exist, not the data that *need* to exist. In order to both probe and improve student learning, colleges and universities must expand the use of assessment on campuses to better capture the outcomes of a liberal education and student learning in general. They will also have to better identify and implement the mechanisms through which students can be engaged more fully in learning to reach the full potential of their achievement.

This is a challenge that goes beyond assessment of student learning as a means of accountability. Confronted with the current evidence, institutions of higher education must ensure that the twenty-first-century story about student learning is also one about improvement. What follows is a discussion of three emerging practices that hold great potential for enhancing both how students learn on campuses and how we measure those gains in the future.

Going Further with Direct Assessment: Using Rubrics to Fully and Authentically Capture Student Learning [44]

Although gathering direct evidence of student learning using standardized assessments (e.g., the CLA, CAAP, and ETS) may be helpful to campuses, the scope of information on student learning obtained through these instruments is constrained by the limited number of outcomes they measure. Additionally, these instruments only assess those skills captured in a particular form of student work (i.e., responses to prompts or brief structured essays), rather than those demonstrated in the range of assignments, research papers, reflection papers, and the like that students produce across a spectrum of courses and learning experiences. Moreover, the significance of findings based on these instruments is questionable. Since the tests are completely disconnected from coursework and grades, students often are not motivated to do their best work on the prompts or even to take them seriously. This may be especially true for seniors.

To raise student achievement on learning outcomes that both faculty and employers value, educators need to ensure that students work on these outcomes, deliberately and frequently, across the curriculum. And, to monitor students' progress and gains over time, educators need direct assessments based on the quality and evidence of students' actual work—work that faculty assign and that students need to take seriously if they wish to earn a degree. A comprehensive learning and assessment framework that includes direct assessment should also include

- ways of orienting students to learning outcomes that will be emphasized throughout a student's educational pathway;
- articulated statements of what learning for each outcome looks like at progressively more complex and sophisticated levels of achievement, and for which learning can be demonstrated through various modes of communication, media, and performance;

» assignments designed to provide students with opportunities to demonstrate their learning for each outcome as individuals and within groups;

» provisions for ongoing feedback and discussion of learning through the integration of assignments, evidence, and goals for improvement into students' portfolio of work over time, connecting general education to the major, the curriculum to the cocurriculum, and school to life.

Currently, the most promising strategy for both assessment and improvement combines e-portfolios with the use of scoring rubrics to evaluate students' progress and proficiency levels on specific learning outcomes. This strategy is especially effective for capturing learning outcomes or skills that are not amenable to, or appropriate for, standardized measurement (e.g., problem solving, teamwork, civic engagement, ethical reasoning, and integrative learning). In 2009, AAC&U released a set of fifteen rubrics for many of the LEAP Essential Learning Outcomes (see p. 2). Created through AAC&U's VALUE (Valid Assessment of Learning in Undergraduate Education) project, the rubrics were developed nationally by interdisciplinary teams of faculty and academic professionals across a range of institutions of higher education in order to articulate expectations for student achievement at various levels of progress and proficiency.[45]

More than one hundred project contributors participated in rubric development teams, assisted with campus testing, or served as advisers.[46] The VALUE rubrics represent nationally shared and articulated expectations of faculty and other educators for learning across progressively more accomplished levels of performance. To date, people from over three thousand unique institutions have accessed the VALUE rubrics online. These institutions span public and private, four-year and two-year, state systems offices, K–12 public school systems, and international colleges and universities. National reliability testing conducted for three of the VALUE rubrics—critical thinking, integrative learning, and civic engagement—has provided a means for evaluating the consistency of rubric evaluation methods and the alignment of faculty expectations, both interdisciplinarily and within four major disciplines.[47] Assessment scholars are currently working to more fully understand the range of campus practices around rubric use and data collected to advance institutional assessment of student learning.[48]

Going the Distance: Using E-portfolios to Capture Student Learning over Time

The growing use of rubrics for institutional assessment highlights the need for higher education to make students' own work the centerpiece of assessment. The e-portfolio is an ideal format for collecting evidence of student work. In addition to facilitating student reflection upon, and engagement with, their own learning across multiyear degree programs, e-portfolios also have the potential to meet the growing need for institutions to capture learning for students who move among institutions, have diverse learning styles, and who may best establish and realize personal learning goals through an interactive, technologically-advanced platform.

Any student e-portfolio used for assessment should possess six core qualities. First, the portfolio should contain evidence that is *authentic*: it should be populated by student work related to curricular and cocurricular activities and assignments that are intentionally aligned with articulated learning goals and outcomes. Second, the range of student work represented in the portfolio should be *dynamic*: student learning products should demonstrate learning in a variety of contexts, including achievement in different media,

forms of expression, and points in time. Third, the portfolio should be *student owned*: the full motivation of engagement in and authenticity of work in the portfolio should emerge through students' own investment in the development and presentation of their learning. Fourth, the portfolio should be *multidimensional*: multiple sources of evidence of learning—over time and across situations—should be included, along with commentary and feedback from external sources. Fifth, the portfolio should be *reflective*: student self-assessment and reflection are integral parts of the presentation and representation of learning. Finally, the portfolio should be *versatile*: its purpose and audience should be changed and altered by students as part of the process of assembling and presenting evidence, sources, and self to others.

Getting Engaged to Maximize Learning: The Role of High-Impact Practices

In recent years, a growing body of evidence has shown that the use of a particular set of educational practices can improve students' engagement in learning and their attainment of outcomes. These practices, labeled as "high-impact" because of their consistent and robust positive affect on an array of learning outcomes, have rapidly become a major focus of both national and campus-level assessments. Individually, these practices are not necessarily new either to campus practice or to research and scholarship. However, evidence of their collective utility as a practical framework for maximizing students' active engagement in learning, and the growing evidentiary connection between the use of these practices and positive gains in learning outcomes, have significantly altered discussions of institutional assessment. The emergence of national and campus data on high-impact practices has shifted the topic of discussion from *whether* students are learning to how students could be learning *better*.

Data from the National Survey of Student Engagement (NSSE) provide a detailed look at the multidimensional effects of high-impact practices on student learning.[49] These practices—including learning communities, first-year seminars, service-learning, undergraduate research, and capstone experiences—have been found to positively affect gains across several broad dimensions of learning, such as deep learning and "gains in practical competence."[50] Moreover, the NSSE data suggest that participation in high-impact practices may be even more beneficial to students from historically underserved populations, particularly students of color. In terms of both grade point average and retention, these students made greater gains than their traditionally more advantaged counterparts.[51] A recent analysis of NSSE data across three public state university systems yielded similar findings in terms of the broad impact of these practices on learning gains for students overall.[52] Additionally, an extensive review of existing research on five of the most common high-impact practices has greatly expanded the understanding of the effectiveness of these practices across a spectrum of learning outcomes.[53]

Despite the abundance of positive evidence regarding high-impact practices, three important caveats contextualize the future growth and development of this work, both on campuses and nationally. First, the majority of students do not currently participate in high-impact practices. Table 10, which draws on data from the Cooperative Institute Research Project (CIRP) to provide a comprehensive look at student participation across an array of high-impact practices, suggests that student engagement in these activities is varied, inconsistent, and, on average, low.

TABLE 10. Percentage of Students Who Participate in High-Impact Practices (2010)

	CIRP Your First College Year[54]	CIRP College Senior Survey[55]	NSSE First-Year Students[56]	NSSE Senior Students[57]
First-year seminars and experiences	*Taken a course or first-year seminar designed to connect faculty and students in focused academic inquiry:* Yes **36.5%**	*No data available*	*No data available*	*No data available*
Learning communities	*Enrolled in a formal program where a group of students take two or more courses together (e.g., first-year interest group, learning community, linked courses):* Yes **12.4%**	*No data available*	*Participated in a learning community or some other formal program where groups of students take two or more classes together:* Done **16%** • Plan to do **27%**	*Participated in a learning community or some other formal program where groups of students take two or more classes together:* Done **27%** • Plan to do **10%**
Writing-intensive courses	*Revised your papers to improve your writing:* Frequently **50.5%** • Occasionally **44.5%**	*Revised your papers to improve your writing:* Frequently **50.3%** • Occasionally **44.4%**	*Prepared two or more drafts of a paper or assignment before turning it in:* Very often **25%** • Often **33%**	*Prepared two or more drafts of a paper or assignment before turning it in:* Very often **20%** • Often **28%**
Collaborative assignments and projects	*Worked with classmates on group projects during class:* Frequently **21.0%** • Occasionally **66.1%** *Worked with classmates on group projects outside of class:* Frequently **21.9%** • Occasionally **66.3%**	*Worked with classmates on group projects during class:* Frequently **39.4%** • Occasionally **56.7%** *Worked with classmates on group projects outside of class:* Frequently **49.1%** • Occasionally **48.8%**	*Worked with other students on projects during class:* Very often **13%** • Often **33%** *Worked with classmates outside of class to prepare class assignments:* Very often **14%** • Often **31%**	*Worked with other students on projects during class:* Very often **18%** • Often **31%** *Worked with classmates outside of class to prepare class assignments:* Very often **26%** • Often **34%**
Undergraduate research	*Worked on a professor's research project:* Frequently **5.2%** • Occasionally **17.1%**	*Worked on a professor's research project:* Frequently **8.8%** • Occasionally **22.7%** *Received from your professor an opportunity to publish:* Frequently **9.1%** • Occasionally **33.0%** *Participated in an undergraduate research program:* Yes **10.4%**	*Worked on a research project with a faculty member outside of course or program requirements:* Done **5%** • Plan to do **34%**	*Worked on a research project with a faculty member outside of course or program requirements:* Done **19%** • Plan to do **14%**

TABLE 10. CONTINUED

	CIRP Your First College Year	CIRP College Senior Survey	NSSE First-Year Students	NSSE Senior Students
Diversity/ global learning	*No data available*	*Participated in study abroad:* Yes **32.5%**	*Study abroad:* Done **3%** • Plan to do **42%**	*Study abroad:* Done **14%** • Plan to do **9%**
Service learning, community-based learning	*Performed community service as part of a class:* Frequently **6.6%** • Occasionally **26.2%**	*Performed community service as part of a class:* Frequently **12.5%** • Occasionally **46.7%**	*Participated in a community-based project (e.g., service learning) as part of a regular course:* Very often **4%** • Often **10%**	*Participated in a community-based project (e.g., service learning) as part of a regular course:* Very often **7%** • Often **11%**
Internships	*No data available*	*Participated in an internship program:* Yes **55.3%**	*Practicum, internship, field experience, co-op experience, or clinical assignment:* Done **7%** • Plan to do **75%**	*Practicum, internship, field experience, co-op experience, or clinical assignment:* Done **50%** • Plan to do **26%**
Capstone courses and projects	*No data available*	*Completed a culminating experience for your degree (e.g., capstone course/ project, thesis, comp exam):* Yes **64.3%**	*Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.):* Done **2%** • Plan to do **49%**	*Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.):* Done **33%** • Plan to do **33%**

Second, little is actually known about the impact of these practices on particular learning outcomes for underserved students. Research that has been disaggregated to analyze gains for these students is predominantly focused on grade point average or rates of retention, persistence, and graduation.[58] Though there is evidence indicating that these students may benefit more from participation in high-impact practices, no national study has measured actual learning gains.[59] Third, campuses must begin to more intentionally link student participation in high-impact practices with institutional learning outcomes. Through better interrogation and disaggregation of data, campuses can more meaningfully inform the story of student achievement at the local level and supply more robust evidence for the transformative impact of higher education at the national level.

CHAPTER 6

The Future of Learning Outcomes

National Initiatives and the Drive for New Knowledge

In the coming years, more will certainly be known about the collection and uses of direct evidence of student learning. The growing attention to high-impact practices will likely produce richer and deeper sources of evidence regarding the efficacy of these practices for all students and, hopefully, for students from underserved groups in particular. The landscape of learning outcomes data will also be improved by the expanding movement among campuses to reorient their general education and program curricula toward an articulated and assessable framework of student learning outcomes. In addition to these likely advances, key developments already underway in higher education are sure to be significant drivers of the next generation of knowledge on student learning outcomes.

First among these emergent developments is the publication of the Degree Qualification Profile, funded by Lumina Foundation.[60] Authored by a group of leading national experts on higher education and student learning, the degree profile "proposes specific learning outcomes that benchmark the associate's, bachelor's, and master's degrees . . . regardless of a student's field of specialization."[61] Broadly, the degree profile articulates competencies at these degree levels across five major learning areas: specialized knowledge, broad/integrative knowledge, intellectual skills, applied learning, and civic learning.[62] The degree profile provides a needed framework for aligning learning both within and between institutions. It also provides a potential means for addressing the growing issue of transfer in higher education by facilitating articulation agreements between two-year and four-year institutions, and within and across state systems.

The second development in learning outcomes research can be found in the growing partnerships being fostered within and across states and state systems of higher education. To date, a significant portion of this work has been advanced through AAC&U's LEAP States initiative and the Compass, Roadmap, and Quality Collaboratives projects. The LEAP States initiative engages states nationwide to align learning outcomes across state systems of higher education in order to foster better articulation and assessment of student learning at the campus, system, and statewide levels.[63] The AAC&U project Give Students a Compass has worked for the past three years with the California State University, the Oregon University System, and the University of Wisconsin System to transform general education curricula through the specification of learning outcomes across campuses within these state systems. A key aspect of this work is a new attention to learning outcomes for all students, through the intentional assessment of learning, high-impact practices, and educational gains for underserved students in the effort to "make excellence inclusive."[64] AAC&U's project Developing a Community College Student Roadmap is "designed to help community colleges create robust and proactive programs of academic support—tied to expected learning outcomes—that engage students at entrance and teach them, from the outset, how to become active partners in their own path for educational success."[65] The Roadmap project is currently working with twelve community colleges across the country to transform pathways for student success on their campuses and nationally. The Quality Collaboratives

project works with partnered four-year and two-year institutions in multiple states to develop methods for capturing, recording, representing, and communicating student achievement on learning outcomes as framed in the Degree Qualifications Profile.[66] These partnerships will help forge new standards for the articulation of transfer between four-year colleges and universities and community colleges.

Finally, much attention has been given not only to students' achievement of learning outcomes while in college, but also to the outcomes prospective college students must achieve in order to be well prepared for college-level work. As a result of President Obama's goal to increase the number of college graduates by 60 percent by 2020, college and career readiness have become focal points for K–12 reform. A center point of this reform has been the development of the common core standards for the language arts and mathematics developed by the National Governors Association Center for Best Practices and the Council of Chief State School Officers.[67] While limited to only a portion of the K–12 curriculum and not yet fully implemented, these standards have been adopted by the majority of states, which have begun the process of aligning them with existing state standards for learning.[68] Additionally, two multistate consortia are engaged in ongoing work to develop and implement assessments that can be used to evaluate college and career readiness. Funded by the US Department of Education, the Partnership for Assessment of Readiness for Colleges and Careers and SMARTER Balanced consortia are working in combination with nearly every state to develop assessments of learning that are aligned with the common core standards.

Final Thoughts

These are just a few of the significant developments on the horizon for both higher education and the assessment of student learning outcomes. There are sure to be others. There is a growing sentiment that liberal education outcomes matter—to employers, to students, to faculty, and to institutions. It is not entirely clear whether they matter in the same way to each of these groups, or whether they are understood in the same ways. The preceding tables and chapters demonstrate that, although we have learned much since the 2005 publication of *Liberal Education Outcomes*, the picture of student learning is still far from complete. Moreover, the additional data we now have do not convey good news, either for core skills like writing and critical thinking or for outcomes related to personal and social responsibility.

The mandate of the twenty-first century isn't to conduct assessment; it is to be able to *articulate* how well students are learning on campuses and to demonstrate the collective worth of higher education. Doing this will take more than assessment. It will also take an understanding of the outcomes we seek, as well as an understanding of the practices needed to achieve them and the tools with which to capture them. It is necessary but not sufficient to use institutional data more fully, to integrate high-impact practices, and to establish rubrics and e-portfolios. Institutions can better focus on retention, graduation, and job attainment when these concerns are contextualized with how well students are actually performing on learning outcomes and skills. And as the current generation of national initiatives demonstrates, change will not be driven by individual institutions alone. Attending to the outcomes students need to achieve success in the twenty-first century is a shared responsibility. From campus and consortial projects, to states, to national movements, it will be a group effort.

Appendix

Cooperative Institutional Research Program College Senior Survey Outcomes Comparison over Time

LIBERAL EDUCATION OUTCOME	College Senior Survey 2005[69]	College Senior Survey 2010[70]
KNOWLEDGE	■ *General knowledge:* Much stronger **46.1%**	■ *General knowledge:* Much stronger **50.5%**
	■ *Knowledge of a particular field or discipline:* Much stronger **59.5%**	■ *Knowledge of a particular field or discipline:* Much stronger **72.5%**
Sciences	■ *Goal: Making a theoretical contribution to science:* Essential or very important **16.9%**	■ *Goal: Making a theoretical contribution to science:* Essential or very important **20.0%**
		■ *Looked up scientific research articles and resources:* Frequently **45.2%** • Occasionally **42.9%** • Not at all **11.9%**
Mathematics	■ *Mathematical ability:* Highest 10% or above average **38.6%**	■ *Mathematical ability:* Highest 10% or above average **41.2%**
Languages	■ *Foreign language ability:* Much stronger **13.0%**	■ *Foreign language ability:* Much stronger **15.8%**
Arts	■ *Artistic ability:* Highest 10% or above average **31.2%**	■ *Artistic ability:* Highest 10% or above average **34.9%**
	■ *Goal: Creating artistic works (painting, sculpture, etc.):* Essential or very important **20.0%**	■ *Goal: Creating artistic works (painting, sculpture, etc.):* Essential or very important **21.4%**
INTELLECTUAL AND PRACTICAL SKILLS		
Inquiry and analysis	■ *Analytical and problem-solving skills:* Much stronger **35.1%**	■ *Problem-solving skills:* Much stronger **43.8%**
Critical thinking	■ *Ability to think critically:* Much stronger **38.7%**	■ *Critical thinking skills:* Much stronger **46.5%**
Written and oral communication	■ *Writing ability:* Highest 10% or above average **60.9%**	■ *Writing ability:* Highest 10% or above average **65.1%**
		■ *How often in the past year did you revise your papers to improve your writing:* Frequently **50.3%** • Occasionally **44.4%** • Not at all **5.2%**

APPENDIX. CONTINUED

LIBERAL EDUCATION OUTCOME	College Senior Survey 2005	College Senior Survey 2010
Written and oral communication	■ *Goal: Writing original works (poems, novels, etc.):* Essential or very important **20.1%**	■ *Goal: Writing original works (poems, novels, etc.):* Essential or very important **22.5%**
	■ *Public speaking ability:* Highest 10% or above average **47.8%**	■ *Public speaking ability:* Highest 10% or above average **51.8%**
		■ *How often in the past year did you make a presentation in class:* Frequently **68.2%** • Occasionally **31.5%** • Not at all **0.4%**
Information literacy	■ *Computer skills:* Highest 10% or above average **44.7%**	■ *Computer skills:* Highest 10% or above average **46.9%**
		■ *How often in the past year did you evaluate the quality or reliability of information you received:* Frequently **47.9%** • Occasionally **47.9%** • Not at all **4.2%**
Teamwork and problem solving	■ *Cooperativeness:* Highest 10% or above average **76.2%**	■ *How often did you work with classmates on group projects during class:* Frequently **39.4%** • Occasionally **56.7%** • Not at all **3.9%**
		■ *How often did you work with classmates on group projects outside of class:* Frequently **49.1%** • Occasionally **48.8%** • Not at all **2%**
INTEGRATIVE AND APPLIED LEARNING		
Synthesis and advanced accomplishment across general and specialized studies		■ *Integrate skills and knowledge from different sources and experience:* Frequently **70.6%** • Occasionally **28.5%** • Not at all **0.8%**
		■ *How often in the past year did you seek alternative solutions to a problem:* Frequently **42%** • Occasionally **54.8%** • Not at all **3.2%**

Notes

1. CIRP existed in 2005, but findings from its "Your First College Year" and "Senior Survey" studies were not included in the original report.

2. Association of American Colleges and Universities, *College Learning for the New Global Century: A Report from the National Leadership Council for Liberal Education and America's Promise* (Washington, DC: Association of American Colleges and Universities, 2007).

3. Ibid., 1.

4. Ibid., 51.

5. Hart Research Associates, *Raising the Bar: Employers' Views on College Learning in the Wake of the Economic Downturn* (Washington, DC: Association of American Colleges and Universities, 2010); Peter D. Hart Research and Associates, *How Should Colleges Prepare Students to Succeed in Today's Global Economy?* (Washington, DC: Association of American Colleges and Universities, 2006); Peter D. Hart Research Associates, *How Should Colleges Assess and Improve Student Learning? Employers' Views on the Accountability Challenge* (Washington, DC: Association of American Colleges and Universities, 2008).

6. Hart Research Associates, *Learning and Assessment: Trends in Undergraduate Education* (Washington, DC: Association of American Colleges and Universities, 2007); Hart Research Associates, *Trends and Emerging Practices in General Education* (Washington, DC: Association of American Colleges and Universities, 2009).

7. The original report included information only on seniors. Additional data on outcomes attainment can be found for both first-year students and seniors from both NSSE (http://nsse.iub.edu/html/reports.cfm) and the Cooperative Institutional Research Program (CIRP) (http://www.heri.ucla.edu/index.php).

8. Due to space limitations, these data are not presented in the main text. See Appendix for presentation of data comparisons.

9. Association of American Colleges and Universities, *Liberal Education Outcomes* (Washington, DC: Association of American Colleges and Universities, 2005).

10. NSSE Institute, "National Survey of Student Engagement (NSSE): 2010 Grand Frequencies" (Bloomington, IN: Indiana University Center for Postsecondary Research, 2010), http://nsse.iub.edu/2010_Institutional_Report/pdf/2010%20SR%20Grand%20Freqs%20by%20Carn.pdf.

11. No data available for science, mathematics, social sciences, humanities, histories, languages, or arts.

12. Wabash National Study of Liberal Arts 2010: "Summary of data from 2,200 students at 17 four-year colleges and universities in the 2006 cohort of the Wabash National Study. Students completed an array of surveys and tests at three points during their college education." See: http://www.liberalarts.wabash.edu/storage/4-year-change-summary-website.pdf.

13. Critical thinking is assessed using the Collegiate Assessment of Academic Proficiency (CAAP). The CAAP is based on direct assessment of student writing and not students' self-reports.

14. Moral reasoning is assessed using the Defining Issues Test (DIT-2). This instrument evaluates student responses to particular scenarios and is not a self-report assessment.

15. The instrument was created by L. Lee Knefelkamp and Richard Hersch. The instrument is now housed at Iowa State University.

16. Due to space constraints a limited number of items from the College Senior Survey (CSS) were chosen to represent the specified outcomes categories. Readers are encouraged to examine the entire CSS for a more robust picture of student attainment on personal and social responsibility outcomes measured by CIRP. See http://heri.ucla.edu/cssoverview.php.

17. Victor B. Saenz and Douglas S. Barrera, "Findings from the 2005 College Student Survey (CSS): National Aggregates" (Los Angeles: Higher Education Research Institute, 2007), http://heri.ucla.edu/PDFs/2005_CSS_REPORT_FINAL.pdf.

18. "AAC&U Liberal Education & America's Promise (LEAP) Outcomes Mapped onto 2010 CIRP College Senior Survey (CSS)," Higher Education Research Institute (HERI), accessed February 2012 http://www.heri.ucla.edu/PDFs/accreditation/LEAPCSS2010.pdf

19. Due to space limitations, only select items could be chosen for inclusion. Readers are encouraged to read more about the instrument and its contents at http://www.aacu.org/core_commitments/Assessment.cfm.

20. In the case of CIRP, certain indicators were not available in 2005 and therefore could not be used for purposes of comparison. See the Appendix for a more detailed list of CIRP items across outcome categories.

21. For further information on these outcomes see Ashley Finley, "Civic Learning and Democratic Engagements: A Review of the Literature on Civic Engagement in Postsecondary Education" (Unpublished paper, 2011), http://www.civiclearning.org/SupportDocs/LiteratureReview_CivicEngagement_Finley_July2011.pdf.

22. Wording of prompt given to faculty, administrators, and student affairs professionals indicated in italics.

23. Eric L. Dey and Associates, *Civic Responsibility: What is the Campus Climate for Learning?* (Washington, DC: Association of American Colleges and Universities, 2009).

24. Eric L. Dey and Associates, *Engaging Diverse Viewpoints: What is the Campus Climate for Perspective Taking?* (Washington, DC: Association of American Colleges and Universities, 2010).

25. Eric L. Dey and Associates, *Developing a Moral Compass: What is the Campus Climate for Ethics and Academic Integrity?* (Washington, DC: Association of American Colleges and Universities, 2010).

26. This data point comes from Robert Reason (director of Research and Assessment for AAC&U's Core Commitments Initiative), in discussion with Nancy O'Neill (former assistant director of the Core Commitments Initiative) September 2011.

27. The ETS Proficiency Profile was formerly the "Measure of Academic Proficiency and Progress (MAPP)."

28. The ETS also uses several subtests to measure additional outcomes. Because proficiency data were not available for these tests, these outcomes are not included in table 5. More information can be found at http://www.ets.org/s/proficiencyprofile/pdf/CredS_CarnA_AllTabs.pdf.

29. The CAAP assessment measures additional learning outcomes. For the purposes of comparison, these outcomes are not presented in table 6. Additional information can be found at http://act.org/caap/norms/.

30. "ETS Proficiency Profile: Freshmen," Educational Testing Service, accessed January 2012, http://www.ets.org/s/proficiencyprofile/pdf/CredF_CarnA_AllTabs.pdf.

31. "ETS Proficiency Profile: Seniors," Educational Testing Service, accessed January 2012, http://www.ets.org/s/proficiencyprofile/pdf/CredS_CarnA_AllTabs.pdf.

32. For information on the "test validity study" see David Shulenberger and Christine Keller, "Interpretation of Findings of the Test Validity Study Conducted for the Voluntary System of Accountability," in *Rising to the Challenge* (Washington, DC: American Association of State Colleges and Universities, Association for Public and Land-Grant Universities, 2010) 26-41. The CLA also measures analytical reasoning and problem solving. National data from the CLA were not available for inclusion in this publication.

33. Richard Arum and Josipa Roksa, *Academically Adrift* (Chicago, IL: University of Chicago Press, 2011).

34. See Ernest Pascarella, Charles Blaich, Georgianna Martin, and Jana Hansen, "How Robust Are the Findings of Academically Adrift?" *Change* 43, no. 3 (2011): 20-24.

35. ACT, "CAAP User Norms, Fall 2004" (Iowa City: ACT, Inc., 2004).

36. ACT, "CAAP User Norms, Fall 2010" (Iowa City: ACT, Inc., 2007), http://act.org/caap/norms/pdf/10Table13.pdf.

37. The HERI Faculty Study has a number of additional items that pertain to either attitudes or practice of liberal education outcomes but that do not lend themselves to direct comparison.

38. NSSE Institute, "FSSE 2004 Frequency Distributions: Total Grand Frequencies" (Bloomington, IN: Indiana University Center for Postsecondary Research, 2004), http://nsse.iub.edu/pdf/fsse_2004_total_grand_freq.pdf.

39. NSSE Institute, "FSSE 2010 Frequency Distributions: Total Grand Frequencies" (Bloomington, IN: Indiana University Center for Postsecondary Research, 2010), http://fsse.iub.edu/pdf/FSSE_IR_2010/FSSE10-GrandFreqs-%28Total-CB%29.pdf.

40. "AAC&U Liberal Education & America's Promise (LEAP) Outcomes Mapped onto the 2010 HERI Faculty Survey," Higher Education Research Institute (HERI), accessed February 2012, http://www.heri.ucla.edu/PDFs/accreditation/LEAPCSS2010.pdf.

41. Data on integrative and applied learning comes from the 2010 Faculty Survey of Student Engagement; see http://fsse.iub.edu/pdf/FSSE_IR_2010/FSSE10-GrandFreqs-%28Total-CB%29.pdf.

42. Victor B. Saenz and Douglas S. Barrera, "Findings from the 2005 College Student Survey (CSS): National Aggregates" (Los Angeles: Higher Education Research Institute, 2007), http://heri.ucla.edu/PDFs/ 2005_CSS_REPORT_FINAL.pdf.

43. "AAC&U Liberal Education and America's Promise (LEAP) Outcomes Mapped onto the 2010 HERI Faculty Survey," Higher Education Research Institute (HERI), accessed January 2012, http://www.heri.ucla.edu/PDFs/accreditation/LEAPCIRPMap.pdf.

44. Terrel L. Rhodes contributed significantly to the writing of this section.

45. See http://www.aacu.org/value/index.cfm. Final versions of the rubrics can be found at http://www.aacu.org/value/rubrics/index_p.cfm?CFID=29207140&CFTOKEN=89053015.

46. With the exception of the "Reading" rubric, all rubrics went through three rounds of drafting, testing on more than one hundred campuses, and redrafting. The "Reading" rubric went through two rounds of testing and redrafting.

47. Approximately forty faculty were recruited nationally to score student work samples. A composite reliability score was calculated for all faculty scorers and separate reliability scores were calculated for faculty within four broad disciplinary areas: humanities, social sciences, natural sciences, and professional and applied sciences.

48. See, for example, the Fall 2011/Winter 2012 *Peer Review* on Assessing Liberal Education Outcomes Using VALUE Rubrics, *Peer Review* 13/14, nos. 4 and 1 (2012).

49. George D. Kuh, *High–Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter* (Washington, DC: Association of American Colleges and Universities, 2008).

50. NSSE also analyzed gains on competence scales pertaining to "gains in general education" and "gains in personal and social development." For a full description of these measures, see http://nsse.iub.edu/.

51. Notably, this analysis is based upon a composite scale of student participation in "educationally purposeful activities," rather than specifically identified high impact practices.

52. See Ashley Finley, "Assessment of High-Impact Practices: Using Findings to Drive Change in the Compass Project," *Peer Review* 13, no. 2 (2011): 29-34.

53. Jayne E. Brownell and Lynn E. Swaner, *Five High-Impact Practices: Research on Learning Outcomes, Completion, and Quality* (Washington, DC: Association of American Colleges and Universities, 2010).

54. "AAC&U Liberal Education & America's Promise (LEAP) Outcomes Mapped onto the 2010 CIRP Your First College Year (YFCY) Survey," Higher Education Research Institute (HERI), accessed February 2012, http://www.heri.ucla.edu/PDFs/accreditation/AACU_LEAP_2010_YFCY.pdf.

55. "AAC&U's Liberal Education and America's Promise (LEAP) Outcomes Mapped onto 2010 CIRP Surveys," Higher Education Research Institute (HERI), accessed January 2012, http://www.heri.ucla.edu/PDFs/accreditation/AACU_LEAP_2010_CSS.pdf.

56. NSSE Institute, "NSSE 2010 Grand Frequencies: Frequency Distributions by Carnegie Classification, First-Year Students," (Bloomington, IN: Indiana University Center for Postsecondary Research), http://nsse.iub.edu/2010_Institutional_Report/pdf/2010%20FY%20Grand%20Freqs%20by%20Carn.pdf.

57. NSSE Institute, "NSSE 2010 Grand Frequencies: Frequency Distributions by Carnegie Classification, Senior Students," (Bloomington, IN: Indiana University Center for Postsecondary Research), http://nsse.iub.edu/2010_Institutional_Report/pdf/2010%20SR%20Grand%20Freqs%20by%20Carn.pdf.

58. See Brownell and Swaner. Ibid.

59. AAC&U is currently conducting research examining this issue, with funding from the TG Public Benefit Grant Program.

60. See: http://www.luminafoundation.org/publications/The_Degree_Qualifications_Profile.pdf.

61. Ibid., 1.

62. The Degree Qualifications Profile also provides space for "institution-specific" learning outcomes.

63. The current LEAP states are California, Kentucky, Massachusetts, North Dakota, Oregon, Utah, Virginia, and Wisconsin. More information on the AAC&U LEAP States initiative can be found here: http://www.aacu.org/leap/states.cfm.

64. More information on AAC&U's Compass project and Making Excellence Inclusive can be found here, respectively: http://www.aacu.org/compass/index.cfm and http://www.aacu.org/compass/inclusive_excellence.cfm.

65. See http://www.aacu.org/roadmap/index.cfm.

66. Lumina Foundation for Education, *The Degree Qualifications Profile* (Indianapolis, IN: Lumina Foundation, 2011).

67. "Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects," Common Core State Standards Initiative, accessed January 2012, http://www.corestandards.org/assets/CCSSI_ ELA%20Standards.pdf.

68. See, for example, A. Porter, J. McMacken, J. Hwan, and R. Yang. "Common Core Standards: The New U.S. Intended Curriculum," *Educational Researcher* 40, no. 4 (2011):103-116.

69. Victor B. Saenz and Douglas S. Barrera, "Findings from the 2005 College Student Survey (CSS): National Aggregates" (Los Angeles: Higher Education Research Institute, 2007) http://heri.ucla.edu/PDFs/2005_CSS_REPORT_FINAL.pdf.

70. "AAC&U Liberal Education & America's Promise (LEAP) Outcomes Mapped onto 2010 CIRP College Senior Survey (CSS)," Higher Education Research Institute (HERI), accessed February 2012 http://www.heri.ucla.edu/PDFs/accreditation/LEAPCSS2010.pdf.

About the Author

Ashley Finley is the senior director of assessment and research at the Association of American Colleges and Universities (AAC&U) and national evaluator for the Bringing Theory to Practice (BTtoP) project. Finley's work, at both the campus and national levels, has focused on developing best practices regarding program implementation, instrumentation, and mixed methods assessment. Specifically, her work combines assistance to campuses with the implementation of assessment protocols and the promotion of best practices within programmatic efforts for successful results. Her view of assessment and research is attentive to the intersection of quantitative and qualitative methodologies and the use of data to tell a cohesive story regarding institutional learning outcomes. As part of this approach, she gives special emphasis to the use of rubrics and e-portfolios as integral components of a holistic approach to campus assessment, from general education to the majors. Her work with BTtoP involves working with campuses to assess the relationships among students' engaged learning, civic development, and psychosocial well-being and assisting campuses in connecting these emphases with core institutional goals and practices.

Before joining AAC&U, Finley was an assistant professor of sociology at Dickinson College. Her teaching and research have focused broadly on issues of social inequality, specifically with regard to gender in social institutions and in Latin America, and the use of quantitative methods. She has taught courses incorporating high-impact learning practices, such as learning communities and service learning. Finley received a BA from the University of Nebraska-Lincoln and an MA and PhD, both in sociology, from the University of Iowa.

AAC&U is the leading national association concerned with the quality, vitality, and public standing of undergraduate liberal education. Its members are committed to extending the advantages of a liberal education to all students, regardless of academic specialization or intended career. Founded in 1915, AAC&U now comprises more than 1,250 member institutions—including accredited public and private colleges, community colleges, and universities of every type and size.

AAC&U functions as a catalyst and facilitator, forging links among presidents, administrators, and faculty members who are engaged in institutional and curricular planning. Its mission is to reinforce the collective commitment to liberal education at both the national and local levels and to help individual institutions keep the quality of student learning at the core of their work as they evolve to meet new economic and social challenges.

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