The Academic Library in Institutional Assessment

Seizing an Opportunity

Janice Steed Lewis

The perfect storm for changing the higher education assessment environment has been brewing for several years. Pressure from the federal government, accrediting bodies, and employers has recently coalesced with concerns expressed by parents and taxpayers about the value of a college education. All constituencies are demanding greater accountability and transparency on the part of colleges and universities, including proof that students who earn an undergraduate degree are prepared for the workplace or to earn an advanced degree. This paper will review the major forces that led to a new climate of assessment in higher education, some of the instruments commonly used to assess undergraduate student learning and growth, and the programs through which results are communicated to prospective students, their parents, lawmakers, and other constituents. The impact of increased emphasis on assessment on academic libraries and the role those libraries can play in institutional assessment activities will also be discussed.

Calls for Assessment

Margaret Spellings, President George W. Bush's secretary of education, played a major role in bringing the need for greater accountability to the forefront. In 2006, her Commission (Spellings Commission) on the Future of Higher Education released a report entitled *A Test of Leadership: Charting the Future of U.S. Education*, which reported that literacy among college graduates had declined over the preceding decade and that unacceptable numbers of college graduates enter the workforce without the critical thinking, writing, and problem-solving skills employers say they need. The commission found "a lack of clear, reliable information about the cost and quality of postsecondary institutions, along with a remarkable absence of accountability mechanisms to ensure that colleges succeed in educating students."[1] It made numerous recommendations for improving the accessibility, affordability, quality, and accountability of higher education institutions. Among the accountability items was the recommendation that higher education institutions make the results of student learning assessments–including value-added measurements that indicate how students' skills have improved over time–available to students and publicly reported at the institutional level as a condition of accreditation. The commission also suggested that higher education accrediting bodies make performance outcomes, including completion rates and student learning, the core of their assessment focus; develop frameworks for comparing institutions; and make data accessible to the public.[2]

In September 2006, while the Spellings Commission was still at work, the Council of Regional Accrediting Commissions noted that all the regional accrediting commissions had changed their accreditation standards to require that institutions engage in student learning assessment and use the results to continuously improve the quality of education.[3]

Higher Education's Response

In an effort to stave off the increased federal regulation implicit in the Spellings Commission report and major changes in the accrediting system, associations of higher education institutions began developing voluntary programs to document and communicate performance outcomes. Two of the largest are the Voluntary System of Accountability (VSA) and the VALUE: Valid Assessment of Learning in Undergraduate Education project.

The VSA was developed in 2007 by the American Association of State Colleges and Universities (AASCU) and the Association of Public and Land-Grant Universities (APLU), formerly called the National Association of State Universities and Land-Grant Colleges (NASULGC). These two associations represent more than 525 public institutions that enroll a total of 7.5 million students and award 70 percent of the bachelor's degrees conferred in the United States each year.[4] As of September 2009, 329 institutions (63 percent of the associations' members) had joined the VSA initiative, which is currently limited to AASCU and APLU member institutions.[5]

The VALUE project is being developed by the Association of American Colleges and Universities (AAC&U).

Janice Steed Lewis (lewisja@ecu.edu) is Associate Director, Academic Library Services, East Carolina University, Greenville, North Carolina.

This organization of twelve hundred private and public colleges and universities of all types and sizes is dedicated to improving the quality, vitality and public standing of undergraduate liberal education.[6]

Both the VSA and the VALUE projects change the focus of institutional data gathering and sharing from input measures like incoming students' SAT scores and faculty credentials that are often used in popular college ranking guides to output measures focused on undergraduate student learning. In addition to meeting stakeholder demands for accountability and transparency, the projects' goals include helping institutions meet the demands of regional accrediting bodies, which want to see that colleges and universities have processes in place to assess and enhance learning outcomes and institutional effectiveness on an ongoing basis.

A third project, called U-CAN, the University and College Accountability Network, was developed by the National Association of Independent Colleges and Universities (NAICU) in response to both the Spelling Commission's report and subsequent demands by Congress and the U.S. Department of Education for easier access to the information that students and their families need to evaluate colleges. NAICU believes that U-CAN and similar projects can help preempt new federal reporting mandates. U-CAN includes only nonprofit private colleges and universities. More than 725 institutions participate. Users can search for specific colleges, browse by state or affiliation/mission, or search by criteria such as degrees offered, percentage of applicants admitted, tuition and fees, student enrollment, test scores, and retention rates. U-CAN's profiles use colorful charts and graphs to show admission and graduation rates, major fields of study, student demographics, class size, financial aid, cost of attendance, campus housing, and student life. Most of the information comes from the U.S. Department of Education's IPEDS survey and the Common Data Set, a collaborative project between publishers and the higher education community that has standardized the collection and dissemination of student demographic data and other factual information relevant to college selection. Links are provided to relevant campus webpages. U-CAN's profiles do not include learning outcomes measures.[7]

The two projects that require student learning outcomes measures and the instruments they use are discussed in greater detail below.

Voluntary System of Accountability

The VSA uses a Web-based reporting template called the College Portrait to help public institutions communicate information about students and institutions in a transparent and consistent manner. Its goals are to help prospective students choose an institution that fits them, permit comparisons of undergraduate education across institutions, and report student experiences on campus and core educational outcomes.[8] It tries to shift the focus of groups that collect and report data from input-based rating systems that emphasize reputation and institutional resources such as number of faculty and endowment size and focus instead on documenting the growth that actually takes place among college students during their college years.

The College Portrait contains three components: student and family information, student experiences on campus, and student learning outcomes. Student and family information includes items such as student and campus characteristics, retention rate, costs of attendance, financial aid, campus safety, student housing, and academic programs. Most of this information is taken from the Common Data Set.

The VSA requires that participating institutions measure student experiences on campus using one of the following surveys:

- College Senior Survey (CSS)
- College Student Experiences Questionnaire (CSEQ)
- National Survey of Student Engagement (NSSE)
- University of California Undergraduate Experience Survey (UCUES)[9]

The survey must be administered to a random sample of seniors, and results must be reported to the VSA, categorized by six specific constructs shown to have been correlated with greater student learning and development:

- group learning;
- active learning;
- experiences with diverse groups of people and ideas;
- student satisfaction;
- institutional commitment to student learning and success; and
- student interaction with faculty and staff. [10]

Participating institutions must update survey results at least every three years.[11] Each of the four surveys cover other items in addition to the six constructs that are reported on the College Portrait. The extent to which they measure library experiences, information literacy, and research skills will be discussed below. Whether or not their institution participates in the VSA's College Portrait, library administrators will benefit from finding out which, if any, student experience surveys are administered at their institution and gaining access to the data files as well as the results that are reported publicly.

The College Portrait reports evidence of student learning outcomes in two ways. First, the institution must describe how it evaluates student learning and include links to institution-specific learning outcomes data, such as reports on program assessments, employer satisfaction with graduates, and professional licensure exam pass rates. Second, institutions must begin trial measurement of student learning gains in critical thinking and written

communication using one of the following standardized tests:

- Collegiate Assessment of Academic Proficiency (CAAP)
- ETS Proficiency Profile, formerly known as the Measure of Academic Proficiency and Progress (MAPP)
- Collegiate Learning Assessment (CLA)[12]

Student learning outcomes as measured by the standardized tests are presented on the College Portrait in two ways: as the learning gains between first and senior years (the value-added by the institution) and as the actual average test scores for each group. The value-added scores reflect the difference between the actual and predicted scores of graduating and entering students, taking into account their academic ability as measured by their average SAT or ACT scores. For consistency, each of the testing organizations agreed to use the method developed by the CLA to calculate their value-added scores for the VSA. The scores are categorized as "well above expected," "above expected," "at expected," "below expected," and "well below expected." The value-added scores are calculated using a cross-sectional method. The reporting of actual average test scores shows whether the average score for seniors is higher than the average score for first-year students. The range of scores varies across the three tests, so the results cannot be compared directly.[13]

Many participating colleges and universities have not previously measured student gains in critical thinking and written communication across all academic disciplines at the institutional level. To assuage their concerns about this assessment method, the VSA decided to treat the student learning outcomes portion of the College Portrait as a pilot. Institutions that participate in the VSA have a four-year time period before test results must be made public. Institutions can use this time to develop the best methods of test administration and to determine how to use the test results to improve educational programs. After the four years, they must report the results and then update them at least once every three years.[14]

The three test instruments are described below, with emphasis on the portions that are reported on the College Portrait and on additional skill areas that relate to information literacy competencies.

Student Engagement Surveys

College Senior Survey

Developed by the Higher Education Research Institute in 1992, the College Senior Survey (CSS) is administered through the Cooperative Institutional Research Program (CIRP). In 2008, 148 institutions participated in the CSS; 90.5 percent were private, and 58.8 percent had a religious affiliation.[15] When administered to college seniors as an exit survey, the CSS gives feedback on students' academic and life experiences that is useful for assessment and planning. Institutions receive results broken out by gender, comparative data for schools of similar type, and, if applicable, a comparison of students' CSS responses compared to their earlier responses on the CIRP Freshmen Survey. When used in conjunction with the CIRP Freshman Survey or the CIRP Your First College Year Survey, the CSS generates longitudinal data on students' cognitive and affective growth during college.[16]

The CSS includes more than two hundred items, plus demographic data. Up to twenty institution-specific questions can be added. The survey items address students' academic experiences (including satisfaction with library facilities); interactions with faculty; use of technology; and their growth during their undergraduate education in a variety of areas, including subject and general knowledge, ability to think critically, and analytical and problem-solving skills. It also includes questions about students' post-college plans and their preparedness for employment and advanced education. The CSS includes more items about political views, life goals, and psychological and moral development than other engagement instruments.

The technology items on the CSS ask students how often, since entering college, they have done each of the following:

- used the Internet for research or homework
- used the Internet to read news sites
- used the Internet to read blogs or to blog
- used the library for research or homework[17]

In 2008, many more students reported frequently turning to the Internet for research or homework (89.9 percent) than to the library (54.9 percent).[18] However, the wording of the technology items fails to acknowledge that the library provides hundreds of subscription and free high-quality, Web-based resources for research or homework needs. It is possible that the wording and proximity of these items led students to interpret the library item as asking only about the frequency of their use of the library's print materials or the library as a physical place to study.

The survey contains items assessing satisfaction with the availability of Internet access, computer facilities and services, and quality of computer training and assistance. Student responses will be of particular relevance to libraries that provide large numbers of computers in a lab or commons environment and those that provide wireless access.

College Student Experiences Questionnaire

The College Student Experiences Questionnaire (CSEQ) was developed in the 1970s. It has been administered to more than three hundred thousand students attending more than four hundred colleges and universities. The

fourth and current edition was released in 1998. The questionnaire has more than 150 items and takes twenty to thirty minutes to complete.[19]

The CSEQ measures three aspects of students' experiences, corresponding with three sections of the survey:

- the quality of effort undergraduate students invest in using educational resources and opportunities ("College Activities")
- students' opinions about the priorities and emphases of the campus ("College Environment")
- students' self-reported progress toward education outcomes ("Estimate of Gains")

The "College Activities" questions ask how often ("very often," "often," "occasionally," or "never") the student has been involved with a particular activity during the school year. The survey items for the "College Activities" section are grouped into thirteen "quality of effort" scales. Each scale contains between five and eleven activities that represent a range of difficulty. To get a high score on a scale, the student must have been involved with even the difficult activities on a frequent basis. The thirteen scales address the following activity areas:

- library experiences
- computer and information technology
- course learning
- writing experiences
- experiences with faculty
- art, music, and theater
- campus facilities
- clubs and organizations
- personal experiences
- student acquaintances
- scientific and quantitative experiences
- topics of conversation
- information in conversations[20]

The "Library Experiences" items ask how often students have done each of the following:

- used the library as a quiet place to read or study materials they brought with them
- found something interesting while browsing in the library
- asked a librarian or staff member for help in finding information on some topic
- read assigned materials other than textbooks in the library (reserve readings, etc.)
- used an index or database (computer, card catalog, etc.) to find material on some topic
- developed a bibliography or reference list for a term paper or other report
- gone back to read a basic reference or document that other authors referred to
- made a judgment about the quality of information obtained from the library, the Web, or other sources[21]

Also of relevance to library experiences are two reading and writing questions:

- During this current year, about how many books have you read? (Answer choices are divided by textbooks or assigned books, assigned packs of course readings, and non-assigned books).
- During this current year, about how many exams, papers, or reports have you written?[22]

The "College Environment" scales assess student perceptions of the psychological climate for learning that exists on the campus. Seven scales ask students to rate how strongly the campus emphasizes or promotes various aspects of student development. One scale rates the emphasis on developing information literacy skills (using computers and other information resources). Others measure the development of academic, scholarly, and intellectual qualities; critical, evaluative, and analytical skills; and vocational and occupational competence.

The "Estimate of Gains" section asks students to reflect on their entire experience at the institution and to estimate how much progress they feel they have made in twenty-five areas. Areas relevant to library use include the following:

- learning on your own, pursuing ideas, and finding information you need
- putting ideas together and seeing relationships, similarities, and differences between ideas
- thinking analytically and logically
- using computers and other information technologies
- writing clearly and effectively
- presenting ideas and information effectively when speaking to others
- gaining a range of information that may be relevant to a career[23]

Institutional reports include respondent characteristics, frequency distributions, and means and descriptives of survey results displayed in total and separately by gender, as well as a raw data file that can be manipulated using SPSS and norms tables from the national database.[24] Results can be analyzed by age, gender, ethnicity, residence, major, first-generation status, and other criteria. Results can be benchmarked against schools in the same Carnegie classification or consortium, and can be analyzed longitudinally and for trends across time.[25]

The CSEQ has more survey items relevant to library experiences than the other student engagement surveys available to VSA participants. Librarians at institutions that administer the CSEQ will be able to use cross-

sectional and longitudinal methods to obtain valuable data about students' library activities, experiences, and perceptions, as well as gains associated with information literacy skills. They can, for example, analyze the effect of student demographic variables on responses to items about library experiences and identify areas of strength and populations that may be underserved.

George Kuh and Robert Gonyea, director and associate director of the Center for Postsecondary Research at Indiana University-Bloomington, used CSEQ data to study the nature and value of undergraduate students' experiences with academic libraries, including changes in use of various library resources over time, the contribution of the library to gains in information literacy and other desired college outcomes, and how use of library resources affects student engagement with effective learning practices.[26] Whitmire used CSEQ data to study the factors that influence undergraduate students' academic library use,[27] disciplinary differences in undergraduates' information-seeking patterns,[28] and the role of academic library experiences in the development of undergraduates' critical thinking skills.[29]

National Survey of Student Engagement

The National Survey of Student Engagement (NSSE) is based conceptually on the CSEQ. Both are administered by the Indiana University Center for Postsecondary Research. The Center for Postsecondary Research offers the following comparison of the two surveys:

> CSEQ offers maximum flexibility in terms of administration timeline; student population surveyed; question customization; cost-effective. . . . NSSE provides additional national, sector, and other comparative information; standard survey population sampling protocol and structured timeline; comprehensive institutional results report.[30]

NSSE has fewer items than the CSEQ. The items selected for NSSE represent empirically confirmed "good practices," that is, behaviors by students and institutions associated with desired outcomes of college. According to research in the field of college student development, the best single predictor of student learning and development is the time and energy students devote to educationally purposeful activities.[31] The use of NSSE has grown rapidly. About twelve hundred institutions have participated in NSSE since 2000; nearly half of this total (643) administered NSSE in 2009 alone.[32]

The "Benchmark Comparisons Report" is one of the documents provided to institutions to accompany the survey. The five benchmarks are Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment. Institutions can compare their benchmark averages for first-year and senior students against peer institutions, above-average institutions with benchmarks in the top 50 percent of all NSSE institutions and high-performing institutions with benchmarks in the top 10 percent of all NSSE institutions.[33]

Institutions can use the benchmark comparisons to determine if the engagement of their typical student differs in a statistically significant way from that of the average student in these comparison groups. Comparisons between first-year and senior students are provided so that gains attributable to the college experience can be measured.[34]

Mark and Boruff-Jones opine that the Level of Academic Challenge and Active and Collaborative Learning benchmarks are "easily applicable" to the assessment of information literacy. They mapped five of the survey questions associated with the Active and Collaborative Learning benchmark to the ACRL Information Literacy Competency Standards for Higher Education and to Bloom's Taxonomy.[35]

The ACRL's Institute for Information Literacy's College Students Surveys Project Group developed information literacy–related items for inclusion as experimental items on the 2006 NSSE. Experimental items are included so that they can be tested on a wide variety of institutions and students to determine if the questions are valid. NSSE's staff found modest to high positive relationships between the information literacy scales and other scales derived from NSSE items. In 2007, Robert Gonyea, the associate director of the Center for Postsecondary Research at Indiana University Bloomington, indicated that some of the information literacy items might be considered for inclusion on the core NSSE instrument.[36] As of 2009, however, the items had not been added to the core NSSE survey.[37]

Groups of six or more colleges and universities participating in NSSE during the same year that want to ask students additional questions can form a consortium. They can add up to twenty questions that have been agreed upon by the consortium members and reviewed by a NSSE research analyst. The mean comparison and frequency reports for each institution include a comparison of their students' responses for all questions against the aggregate of the other consortium members.[38] NSSE formed a twenty-member Information Literacy consortium in 2008.[39] The NSSE surveys administered in 2008 to students at those twenty schools included the following questions:

- In your experience at your institution during the current school year, about how often have you done each of the following ("very often," "often," "sometimes," or "never")?
  - asked a librarian for help (in person, e-mail, chat, etc.)
  - gone to a campus library to do academic research

- used your institution's Web-based library resources in completing class assignments

- Which of the following have you done or do you plan to do before you graduate from your institution ("have not decided," "do not plan to do," "plan to do," or "done")?
  - participate in an instructional session led by a librarian or other library staff member
  - participate in an online library tutorial

- To what extent does your institution emphasize each of the following ("very much," "quite a bit," "some," or "very little")
  - developing critical thinking and analytical abilities
  - developing the ability to obtain and effectively use information for problem-solving
  - developing the ability to evaluate the quality of information available from various media sources (TV, radio, newspapers, magazines, etc.)

- To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas ("very much," "quite a bit," "some," or "very little") evaluating the quality of information
  - ethical use of information in academic work (proper citation use, not plagiarizing, etc.)[40]

Libraries that want to use the existing Information Literacy Consortium questions or formulate new ones need to contact NSSE and follow the consortium timeline to ensure that the questions are approved in time for inclusion in the survey.

A special 2009 issue of the journal *New Directions for Institutional Research*, edited by Kuh and Gonyea, focused on using NSSE for institutional research. It is an excellent source for learning more about the student engagement construct and how NSSE results have been used by institutions for accreditation, planning, assessment, and identifying actionable items. Libraries are not mentioned in any of the eight articles.[41]

University of California Undergraduate Experience Survey

The University of California Undergraduate Experience Survey (UCUES) was developed to meet the assessment, program review, and planning needs of the University of California (UC) system. UC's assessment officers believed that national surveys such as the NSSE and the CSS did not include enough respondents in each major to be used for academic program review and did not measure need for, use of, and satisfaction with student services in sufficient detail to meet the system's research needs.[42]

UCUES was first administered in the spring of 2002 as a sample, online survey. Since then, UCUES has become a census, online survey sent to all UC undergraduates. According to the UCUES website, it is the only survey designed as a longitudinal study of the student's experience at research universities.[43] UCUES uses a modular design. A core module is administered to all students, three additional modules are randomly assigned, and a fourth optional module allows individual campuses the opportunity to survey their students on issues of campus concern. The core module focuses primarily on topics related to academic program review, but also covers student demographics, campus climate for diversity, academic engagement, use of time, and general satisfaction. A slightly different version of the core is offered to students with a declared major, with this version focusing specifically on students' experience in their major department. The three randomly assigned modules address student life and development, academic engagement, and civic engagement.[44]

The core module contains items asking students to rate their level of proficiency in various areas of academic and personal development when they started at the campus and at the time of the survey, using a scale of 1 ("very poor") to 6 ("excellent"). Areas assessed include analytical and critical thinking skills, ability to be clear and effective when writing, Internet skills, library research skills, other research skills, and ability to prepare and make a presentation.[45] In 2008, for example, 51 percent of seniors reported that their library research skills were "very good" or "excellent" compared to 11 percent who rated their skills at this level when they started UC.[46] The core module also measures involvement in various research and creative activities as a UC student, including whether students are currently doing or have completed a research project, creative activity, or paper as part of their coursework; whether they are currently doing or have completed at least one research course; and whether they have assisted faculty with research, either with course credit, for pay, or as a volunteer. Questions specific to the major include how often students were required to "judge the value of information, ideas, actions and conclusions based on the soundness of sources, methods and reasoning" and how often they "examined how others gathered and interpreted data and assessed the soundness of their conclusions." Satisfaction items include "accessibility of library staff" and "availability of library research materials."[47]

The Academic Engagement module asks students to rate, on a scale of 1 ("not important") to 6 ("essential") the importance of various aspects of being an undergraduate at a research university like UC. The six items include learning about faculty research (an area where libraries can contribute through the development and support of institutional repositories), learning research methods (a good fit with upper-level, course-integrated library instruction classes), and having access to a world-class library collection.[48] In 2008, having access to a world-class library

collection was ranked highest among the six items, with 75 percent of respondents answering that it was "somewhat important" "very important," or "essential"; learning research methods was second, with 63 percent.[49]

The UCUES survey item asking students to rate their level of proficiency in the area of library research skills can show value-added by the library. The ability to compare students' gains in library research skills with those made during the same period in other areas of academic and personal development—and to compare ratings across institutions—can be valuable components of a library's assessment and improvement program.

Steve Chatman, the project director for the UC system's Student Experience in the Research Library (SERU) Project (of which UCUES is a part), has published several studies based on UCUES results. According to Chatman, the 2006 administration of the survey found greater variance among majors within the nine UC institutions that administered the survey than between equivalent majors across institutions. He argued that the results called into question institutional comparisons of performance measures that do not take academic program mix into consideration, as well as campus performance comparisons that do not recognize pedagogical differences by academic major.[50] He found that

> generally speaking, students in humanities and social sciences tend to be more satisfied with their education experience overall, with the improvement they have made in critical thinking, communication, cultural appreciate and social awareness. In contrast, engineering, business administration, mathematics and computer science students report more collaborative learning and mathematical skills. Engineering, biological sciences, and physical sciences students clearly spend more time preparing for and attending class and labs.[51]

Similar analyses could be done comparing differences in library research skills across majors or comparative satisfaction with library staff or with the availability of research materials.

The SERU Project research team formed the SERU Consortium in 2008, which currently includes the nine undergraduate campuses of the UC system, along with five other Association of American Universities (AAU) institutions: the University of Michigan at Ann Arbor, the University of Minnesota, Rutgers University, the University of Florida, the University of Pittsburgh, and the University of Oregon. Other AAU universities have been invited to join the SERU Consortium.[52] AAU's membership includes sixty-two public and private research universities in the United States and Canada.[53] All but four of the members of AAU are also members of the Association of Research Libraries. The promotional materials for the SERU Consortium focus on the benefits of disaggregated data, stating, for example, "One of the primary findings of the SERU Project's earlier research is that there are many student experiences within a campus, and therefore any useful analysis requires a large and longitudinal data set to allow for disaggregating student responses. Campus-wide gauges of student satisfaction, for example, are largely meaningless."[54] AAU member libraries may want to advocate for the use of the UCUES survey at their universities, as it provides extremely useful value-added and benchmarking information.

Student Learning Outcomes Instruments

Collegiate Assessment of Academic Proficiency

CAAP is a standardized, nationally normed general education outcomes assessment instrument from ACT. The oldest of the three tools selected for use in the VSA's College Portrait,[55] CAPP has been used by approximately four hundred colleges and universities over the past twenty-three years.[56] CAAP has six independent test modules: Reading, Writing Skills, Writing Essay, Mathematics, Science, and Critical Thinking. Institutions can select the modules that meet their mission, goals, and educational objectives. Nine locally developed questions can be added to the test. All modules except the writing essay are multiple-choice format.[57]

Institutions using CAAP to measure student learning outcomes for use on the VSA's College Portrait must administer the critical thinking and writing essay modules.[58] The CAAP Critical Thinking Test contains thirty-two items that present arguments using a variety of formats, including case studies, debates, editorials, overlapping positions, and statistical arguments. Critical Thinking results are reported for three content areas: Analysis of Elements of Arguments, Evaluation of Arguments, and Extension of Arguments.

Evaluation of Arguments includes the ability to evaluate information on the basis of its consistency, relevancy, accuracy, and sufficiency, as well as the ability to evaluate replies to arguments.[59] These abilities are very similar to those expressed in ACRL's Information Literacy Competency Standard 3: "The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system."[60]

The CAAP Writing Essay consists of two twenty-minute writing tasks defined by a short prompt that identifies a hypothetical situation and audience. The student must take a position on the issue involved and explain to the audience why it is the better alternative. Responses are evaluated according to how well the student formulates a clear assertion of the issues raised in the prompt, supports that assertion with appropriate reasons and evidence, and develops the argument coherently and logically.[61] The

scoring system for the Writing Essay is described on the CAAP website. According to the site, upper-range papers "clearly engage the issue identified in the prompt and demonstrate superior skill in organizing, developing, and conveying in standard written English the writer's ideas about the topic."[62]

An institution's CAAP results can be benchmarked internally against scores from earlier years or against national user norms. Administration to first-year students and seniors as prescribed by the VSA allows institutions to show the value added by the college experience. CAAP results can also be used to evaluate strengths and weaknesses of the institution's general education program within specific content areas and identify areas where improvements can be made. CAAP results can then be examined longitudinally to assess the impact of specific interventions or changes to the general education program.

Collegiate Learning Assessment

Developed by the Council for Aid to Education, the Collegiate Learning Assessment (CLA) has been administered to 165,000 students at more than 400 institutions since it became available in the spring of 2004.[63] The 2006 Spellings Commission report specifically identified the CLA as a viable instrument for measuring student learning.[64] In the year following the release of the Spellings report, the number of institutions using the CLA more than doubled.[65] Approximately 225 institutions administered the CLA in 2008–09 alone.[66]

According to the Council for Aid to Education, the CLA is designed to measure "an institution's contribution to the development of key higher order competencies, including the effects of changes to curriculum and pedagogy," that is, the value the institution adds to the students' critical thinking, analytic reasoning, problem solving, and written communication skills.[67] The CLA encourages institutions to compare their results with learning results at other institutions, with the hope that highlighting differences between institutions can lead to improvements in teaching and learning. The CLA has two major components: a set of performance tasks and a set of two different kinds of analytic writing prompts. The performance tasks set out realistic problems that require students to analyze complex materials. Students are asked either to solve the problems or to recommend a course of action based on the evidence provided. The writing prompts ask students either to build and defend a position on a topic or to critique an argument.[68] Both components must be administered by institutions using the CLA to measure student learning outcomes for the VSA's College Portrait.[69]

Students' written responses are evaluated to assess their abilities to think critically, reason analytically, solve problems, and communicate clearly and cogently. Libraries can tie a number of the items contained on the common scoring rubric for the performance tasks to the ACRL's Information Literacy Competency Standard 3. Among them are the following:

- How well does the student assess the quality and relevance of evidence?
- How well does the student analyze and synthesize data and information?
- How well does the student form a conclusion from his or her analysis, including constructing cogent arguments rooted in data and information and selecting the strongest set of supporting data?[70]

The Council of Independent Colleges was an early adopter of the CLA. Members have used CLA results to develop quality improvement programs and have used CLA–based exercises in faculty development programs. Members have found that involving faculty members in assessment is essential, as is pairing CLA results with other assessment measures.[71]

The CLA is generally administered to first-year students in the fall and to seniors in the spring. The value added is estimated using a cross-sectional design comparing random samples of first-year students and seniors. As more institutions administer the instrument over a number of years, increased use of longitudinal results is expected.[72]

CLA institutional reports compare a school's actual CLA score to its expected CLA score. Expected scores are based on the academic ability of the students at the institution before entering college, as measured by their SAT or ACT scores, and the estimated linear relationship between CLA scores and entering academic ability of student samples at all schools. Institutions can benchmark against the mean CLA scores of all schools that administered the CLA during the same time period, of schools with scores in the 25th percentile, or of schools with scores in the the 75th percentile.[73] Institutional results include a student-level data file that can be used to cross-reference and correlate CLA scores with variables such as gender, major, GPA, and ethnicity.[74]

Initial findings of a study by the Social Science Research Council support the premise that the CLA does in fact document that learning takes place at different rates at different institutions. The council is conducting a longitudinal study of twenty-three hundred students at twenty-four colleges and universities from freshman to senior year that will measure the extent to which their higher order skills, as measured by the CLA, improve. The initial findings compare the results of CLA tests administered at the beginning of the students' first year and the end of sophomore year. The study found large institutional differences in student learning: Twenty-nine percent of the variation in longitudinal growth in CLA performance occurred across schools, lending support to the premise that the CLA does indeed measure the value added by different institutions. The study also found that students concentrating in math,

science, social sciences, and humanities have higher levels of growth in reasoning and communication, as measured by the CLA, than do students in education, human services, or business. Measures of engagement had varying relationships to growth in CLA scores. Hours spent studying alone were positively correlated with improvement in CLA performance, while hours spent studying in groups were negatively associated with improvement. Student perceptions of high faculty expectations were strongly associated with improvement on the CLA. The study also found that students with stronger high school preparation as measured by high school grades and Advanced Placement scores not only had higher performance on the CLA as freshmen, but also widened the gap with other students over the first two years of college.[75]

Librarians at institutions that administer the CLA will want to investigate the CLA in the Classroom initiative. CLA in the Classroom includes a set of curricular and pedagogical programs that focus on student development of key higher order skills, including critical thinking and analytical reasoning. Librarians have an opportunity to develop and offer course-integrated assignments using library resources that teach and reinforce information literacy and critical thinking skills as part of these curricular programs.[76]

Measure of Academic Proficiency and Progress

The Educational Testing Service offers the ETS Proficiency Profile, the third instrument that institutions participating in the VSA's College Portrait can use to assess general educational outcomes. The ETS Proficiency Profile was formerly called the Measure of Academic Proficiency and Progress, which was the successor to the Academic Profile, a tool in use since 1987.[77] The ETS Proficiency Profile is an integrated test of general education skills. It uses multiple-choice questions to test skills in critical thinking, reading, writing, and mathematics. Each question is associated with a particular academic context: humanities, social sciences, or natural sciences. Institutions can add an optional writing essay and up to fifty locally authored questions.[78] The VSA's College Portrait reports the results of the critical thinking and writing portions of the ETS Proficiency Profile using the value-added method.[79]

Institutions that administer the complete ETS Proficiency Profile survey will receive results using the instrument's three proficiency classifications (Proficient, Marginal or Not Proficient). The proficiency classifications measure how well students have mastered each skill area. For example, a student who shows Level III proficiency in Reading/Critical Thinking can:

- evaluate competing causal explanations;
- evaluate hypotheses for consistency with known facts;
- determine the relevance of information for evaluating an argument or conclusion; and
- recognize flaws and inconsistencies in an argument.[80]

These skills are the closest match to competencies contained in the ACRL Information Competency Standards.

Complete ETS Proficiency Profile results include a summary of proficiency classifications, which are categorical and criterion-referenced, and scaled scores, which are numeric and norm-referenced. An overall score is provided, along with scores for the four skill areas and the three content areas. Results can be analyzed by age, gender, ethnicity, GPA, hours worked, major, content/skill/total scaled score, proficiency classification, and other criteria.[81]

ETS Proficiency Profile results can be analyzed using a cross-sectional study design that compares cohorts of first-year students and seniors. This is the method used by VSA. Institutions can also conduct longitudinal studies with ETS Proficiency Profile test results to determine how much the same cohort of students is learning over time. Institutions have used ETS Proficiency Profile results to assess the overall effectiveness of their general education programs, improve curriculum by using actionable score reports to pinpoint strengths and areas of improvement, and as a benchmarking tool by comparing their results to either the overall results at the more than 380 institutions that have administered ETS Proficiency Profile or to the results at similar institutions as defined by Carnegie classification.[82]

According to the ETS Proficiency Profile website, institutions in the Master's (Comprehensive) Colleges and Universities I and II and Baccalaureate (Liberal Arts) Colleges I and II classifications are the heaviest users of the instrument. From January 2003 to July 2007, 118 master's-level institutions and 110 baccalaureate institutions used ETS Proficiency Profile or Academic Profile. During the same time period, these tools were used by 75 Associate's Colleges, 35 Specialized Institutions, and 30 Doctoral/Research Universities I and II.[83]

Librarians at institutions that use a standardized test instrument to measure student learning outcomes will want to examine the questions asked and map them to information literacy standards, as appropriate. They may also want to consider whether to add locally developed questions (or in the case of NSSE, consortial questions) specifically related to information literacy skills to the survey, if this option is available.

VALUE Project

The VALUE project is a grant-funded initiative of the AAC&U. The project is based on the assumptions that colleges and universities want to foster and assess numerous essential learning outcomes beyond those addressed by standardized tests, and that good practice requires multiple assessments over time as student progress through the curriculum and learning becomes more complex and

sophisticated.[84] Teams of faculty from "leadership" and "partner" campuses identified fifteen essential learning outcomes and developed institutional-level rubrics for each one. The rubrics reflect faculty expectations of what college students should learn, regardless of the type, size, location, or mission of the institution they attend. The essential learning outcomes include intellectual and practical skills (inquiry and analysis, critical thinking, creative thinking, written communication, oral communication, reading, quantitative literacy, information literacy, teamwork, and problem solving), personal and social responsibility (civic knowledge and engagement locally and globally, intercultural knowledge and competence, ethical reasoning, and foundations and skills for lifelong learning), and integrative learning. Each rubric contains fundamental criteria considered critical for judging the quality of student work for that particular outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading.[85]

The VALUE project adopted the National Forum on Information Literacy's definition of information literacy as "the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively and responsibly use and share that information for the problem at hand."[86] The Information Literacy VALUE Rubric assesses students' abilities in the following five areas:

- determining the extent of information needed
- accessing the needed information
- evaluating information and its sources critically
- using information effectively to accomplish a specific purpose
- accessing and using information ethically and legally[87]

These five abilities very closely correspond to the five ACRL Information Literacy Competency Standards. Academic librarians at AAC&U member institutions may be able to capitalize on interest in the VALUE Project and the use of the rubrics on their campuses. The VALUE Project provides an excellent opportunity to reiterate the importance of information literacy and to redouble efforts to develop partnerships with classroom faculty and others on campus to plan, implement, and assess a systematic, comprehensive information literacy program that helps students achieve capstone performance levels.

Conclusion

Historically, many academic libraries have not been heavily involved in institutional assessment efforts. The renewed emphasis on assessment in higher education and the adoption of new assessment tools and reporting structures offers libraries the opportunity to join the dialogue and define their contributions to student learning and positive student experiences. Libraries should carefully examine the types of institutional assessment being done on their campuses and advocate for instruments that specifically measure library experiences, information literacy, and research skills.

The VSA gives institutions the choice of four instruments for measuring student experiences on campus. Of these instruments, the CSEQ has the greatest number of items relevant to library experiences. It also provides the opportunity to establish benchmarks using the national norms tables. Libraries can then set evidence-based targets and measure progress toward achieving them each time the survey is given. Library administrators at institutions that have not selected an instrument for measuring student experiences should strongly consider the benefits of the CSEQ and propose its adoption.

UCUES is also a good choice, as it includes items that are sufficiently narrow to allow a library to reasonably assume responsibility and be held accountable for outcomes. Libraries can use the self-assessment component of UCUES to measure students' perception of value added by their library experiences. Variations in library experiences by academic major can be identified and specific targets set for improvement by major, if appropriate. Unfortunately, even with the expansion of UCUES to AAU institutions, it is available to only a small number of schools at the present time.

From a library perspective, the CSS is the least useful of the four surveys. It has only one question specifically about the library, and that question focuses on general use, providing little actionable data.

NSSE is increasingly the student experiences survey of choice among institutions of higher learning. The five "Benchmarks of Effective Educational Practices" are widely cited and NSSE survey results are highly publicized. Although two of the benchmarks, Level of Academic Challenge and Collaborative Learning, are related to the assessment of information literacy, it will be more difficult to show the library's contribution to these scores than to the specific library items in the CSEQ and UCUES surveys. The fact that none of the articles in the special issue of *New Directions for Institutional Research* mentioned libraries is an indication that many institutions do not consider the library to be a primary contributor to outcomes for these educational practices. However, it will be possible to more thoroughly assess the library's contributions if the Information Literacy Consortium questions are included in the NSSE survey. It is important to repeat the questions on a regular basis so that changes in library use, participation in various library activities, and the contribution the library makes to student skills in evaluating the quality and ethical use of information can be measured over time and correlated with changes in library instructional methods, outreach initiatives, and so on.

The three instruments accepted by the VSA as measures of student learning outcomes can be ranked according to the relative ease in mapping them to ACRL Information Competency Standard 3. The CLA is the easiest to map, followed by the CAAP and then the MAAP. Whichever instrument is used, libraries should analyze the results to establish benchmarks and targets that are tied its instruction and information literacy programs. National results will identify institutions in the upper percentiles. Examination of their programs can help identify best practices. In addition, libraries should analyze underlying data files to identify areas of strength and weakness by GPA, major, ethnicity, and other factors. Libraries can use this information to develop marketing plans and programs targeted at specific populations.

The VALUE Project shows promise. Still in the development stage, project members say that they are hoping to write rubrics at the discipline and course levels. These rubrics will have the core elements of the institutional rubrics nested within them and will also show that the essential learning outcomes should not be relegated to general education courses or to stand-alone courses. Publications are forthcoming that will show how the rubrics can be used on campuses. The developers welcome ongoing discussions as the rubrics continue to evolve.[88]

There is no doubt that increased demands for accountability in higher education are here to stay. This presents academic libraries with an opportunity to play a greater role in institutional assessment activities and possibly influence the choice of assessment tools. The information collected via these tools can help identify the contributions the library makes to student learning and a supportive campus environment. It can also increase the library's understanding of undergraduate students' library experiences and perceptions and aid in the libraries' own strategic planning and quality improvement processes—a win-win situation for everyone.

References and Notes

1. U.S. Department of Education, "A Test of Leadership: Charting the Future of U.S. Higher Education," 2006, www.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf (accessed Sept. 28, 2009): x.
2. Ibid., 24–25.
3. Barbara A. Beno, "Letter to David E. Shulenburger" (Council of Regional Accrediting Commissions, Sept. 21, 2006), www.voluntarysystem.org/docs/faq/Q&A.pdf (accessed Sept. 29, 2009).
4. Voluntary System of Accountability (VSA), "About VSA," www.voluntarysystem.org/index.cfm?page=about_vsa (accessed Sept. 28, 2009).
5. VSA, "VSA Participants by State," www.voluntarysystem.org/index.cfm?page=templates (accessed Sept. 28, 2009).
6. Association of American Colleges and Universities, "About AAC&U," www.aacu.org/about/index.cfm (accessed Sept. 28, 2009).
7. University and College Accountability Network, "Commonly-Asked Questions about U-CAN," www.ucan-network.org/commonly-asked-questions-about-u-can-2 (accessed Sept. 28, 2009).
8. VSA, "Overview of College Portrait," www.voluntarysystem.org/docs/cp/CollegePortraitOverview.pdf (accessed Sept. 28, 2009).
9. VSA, "Participation Agreement," www.voluntarysystem.org/docs/SignUp/VSAParticipationAgreement.pdf (accessed Sept. 28, 2009).
10. National Survey of Student Engagement, "NSSE and the Voluntary System of Accountability," http://nsse.iub.edu/html/vsa.cfm (accessed Sept. 28, 2009).
11. VSA, "Participation Agreement."
12. Ibid.
13. VSA, "Information on Learning Outcomes Measures," www.voluntarysystem.org/docs/cp/LearningOutcomesInfo.pdf (accessed Sept. 28, 2009).
14. VSA, "The College Portrait Common Questions and Answers," www.voluntarysystem.org/docs/faq/Q&A.pdf (accessed Sept. 28, 2009).
15. Amy Liu et al., "Findings from the 2008 Administration of the College Senior Survey (CSS): National Aggregates" (Los Angeles: Higher Education Research Institute, UCLA, June 2009), www.heri.ucla.edu/PDFs/pubs/Reports/CSS2008_FinalReport.pdf (accessed Sept. 28, 2009).
16. Higher Education Research Institute (HERI), "College Senior Survey," www.heri.ucla.edu/cssoverview.php (accessed Sept. 28, 2009).
17. HERI, "2008–09 College Senior Survey," www.gseis.ucla.edu/heri/PDFs/surveyAdmin/CSS/css08-09.Instrument.pdf (accessed Sept. 28, 2009).
18. Liu et al., Findings from the 2008 Administration of the College Senior Survey (CSS): National Aggregates, 8.
19. Robert M. Gonyea et al., "College Student Experiences Questionnaire: Norms for the Fourth Edition" (Bloomington: Indiana University Center for Postsecondary Research, Policy, and Planning, 2003), http://cseq.iub.edu/pdf/intro_CSEQ_4th_Ed_Norms.pdf (accessed Sept. 29, 2008); for survey see http://cseq.iub.edu/pdf/cseq_whole.pdf (accessed Feb. 10, 2010).
20. Ibid., 3–4.
21. http://cseq.iub.edu/pdf/cseq_whole.pdf, 3.
22. http://cseq.iub.edu/pdf/cseq_whole.pdf, 6.
23. HERI, "College Student Experiences Questionnaire," http://cseq.iub.edu/pdf/cseq_whole.pdf (accessed Feb. 10, 2010).
24. Higher Education Research Institute, "The College Student Experiences Questionnaire Assessment Program Administration: What You Get," http://cseq.iub.edu/admin_whatyouget.cfm (accessed Sept. 28, 2009).
25. HERI, "The College Student Experiences Questionnaire Assessment Program Administration: Special Analysis," http://cseq.iub.edu/admin_specialanalysis.cfm (accessed Sept. 28, 2009).
26. George D. Kuh and Robert M. Gonyea, "The Role of the Academic Library in Promoting Student Engagement in Learning," *College & Research Libraries* 64, no. 4 (July 2003): 256–82.
27. Ethelene Whitmire, "The Relationship between Undergraduates' Background Characteristics and College Experiences and Their Academic Library Use," *College & Research Libraries* 62, no. 6 (Nov. 2001): 528–40.
28. Ethelene Whitmire, "Disciplinary Difference and Undergraduates' Information-Seeking Behavior," *Journal of the*

American Society for Information Science and Technology 53, no. 8 (June 2002): 631–38.
29. Ethelene Whitmire, "Development of Critical Thinking Skills: An Analysis of Academic Library Experiences and Other Measures," *College & Research Libraries* 59, no. 3 (May 1998): 266–73.
30. Julie Williams and Michelle S. Holmes, "Assessing Student Engagement and Educational Effectiveness" (presentation at the First Year Experience Annual Conference, Dallas, February, 2007), http://cseq.iub.edu/pubs.cfm?action=&viewwhat=Conference%20Paper,Conference%20Presentation (accessed Sept. 28, 2009).
31. George D. Kuh, "The National Survey of Student Engagement: Conceptual Framework and Overview of Psychometric Properties," http://nsse.iub.edu/pdf/conceptual_framework_2003.pdf (accessed Sept. 28, 2009).
32. NSSE, "Quick Facts about NSSE," http://nsse.iub.edu/html/quick_facts.cfm (accessed Sept. 28, 2009).
33. NSSE, "Benchmark Comparisons," http://nsse.iub.edu/2009_Institutional_Report/pdf/NSSE09%20Benchmark%20Comparisons%20Report%20(NSSEville%20State).pdf (accessed Sept. 28, 2009).
34. Ibid., 2.
35. Amy E. Mark and Polly D. Boruff-Jones, "Information Literacy and Student Engagement: What the National Survey of Student Engagement Reveals about Your Campus," *College & Research Libraries* 64, no. 6(Nov. 2003): 480–93.
36. Bonnie Gratch-Lindauer, "Information Literacy-Related Student Behaviors: Results from the NSSE Items, " *College & Research Libraries News* 68, no. 7 (July/Aug. 2007): 432–36.
37. NSSE, NSSE 2009 U.S. Web Version, http://nsse.iub.edu/pdf/US_web_09.pdf (accessed Sept. 28, 2009).
38. NSSE, "Consortia or State University Systems," http://nsse.iub.edu/html/consortia.cfm (accessed Sept. 28, 2009).
39. NSSE, "NSSE 2008 Consortia and Coordinators," http://nsse.iub.edu/html/consortia-list_2008.cfm (accessed Sept. 28, 2009).
40. NSSE, "National Survey of Student Engagement 2008 The College Student Report, Additional Questions," http://nsse.iub.edu/pdf/consortia/2008_extraq/LIT_2008_Web.pdf (accessed Sept. 28, 2009).
41. Robert M. Gonyea and George D. Kuh, eds., "Special Issue: Using NSSE in Institutional Research," *New Directions for Institutional Research* 141 (Spring 2009).
42. University of California (UC), "University of California Undergraduate Experience Survey FAQ," www.universityofcalifornia.edu/studentsurvey/about/faq.html (accessed Sept. 28, 2009).
43. UC, "University of California Undergraduate Experience Survey History of UCUES," www.universityofcalifornia.edu/studentsurvey/about/history.html (accessed Sept. 28, 2009).
44. UC, "University of California Undergraduate Experience Survey Structure and Content of UCUES 2008," www.universityofcalifornia.edu/studentsurvey/about/structure.html (accessed Sept. 28, 2009).
45. UC, "Survey and Content of UCUES 2008," www.universityofcalifornia.edu/studentsurvey/pdf/UCUES_2008_Survey_Instrument.pdf (accessed Sept. 28, 2009).
46. UC, "Self-Reported Gains in Academic and Life Skills (for Seniors) (pt. 1)," www.universityofcalifornia.edu/studentsurvey/charts/charts_pdf/2008_aca_self-reportedgains1.pdf (accessed Sept. 28, 2009).
47. UC, "Survey and Content of UCUES 2008," 8–9.
48. Ibid., 24.
49. University of California, "Importance of Research Opportunities," www.universityofcalifornia.edu/studentsurvey/charts/charts_pdf/2008_sat_importanceofresearchopportunities.pdf (accessed Sept. 28, 2009).
50. Steve Chatman, "Institutional Versus Academic Discipline Measures of Student Experience: A Matter of Relative Validity" (Berkeley, CA: University of California Center for Studies in Higher Education, May 2007), http://cshe.berkeley.edu/publications/docs/ROP.Chatman.AcadDisciplines.6.5.07.pdf (accessed Sept. 28, 2009).
51. University of California Center for Studies in Higher Education (UCCSHE), "Comparable Measures Recommended by Spellings' Commission on the Future of Higher Education are Misleading at Best" (June 19, 2007, http://cshe.berkeley.edu/news/index.php?id=32 (accessed Sept. 28, 2009).
52. UCCSHE, "Student Experience in the Research University (SERU) Project and Consortium," http://cshe.berkeley.edu/research/seru/index.htm (accessed Sept. 28, 2009).
53. Association of American Universities, "About AAU," www.aau.edu/about/default.aspx?id=58 (accessed Sept. 28, 2009).
54. UCCSHE, "Student Experience in the Research University (SERU) Project and Consortium."
55. VSA, "Information on Learning Outcomes Measures," http://voluntarysystem.org/docs/cp/LearningOutcomesInfo.pdf, 5 (accessed Sept. 28, 2009).
56. Judith S. Eaton, "Accountability: An 'Old' Issue in a New Era," *Inside Accreditation* 5, no. 4 (June 2, 2009): 1, www.chea.org/ia/IA_2009.06.02.html (accessed Sept. 28, 2009).
57. ACT, "CAAP Test Modules," http://www.act.org/caap/tests/index.html (accessed Feb. 11, 2010).
58. VSA, "Information on Learning Outcomes Measures," 1.
59. ACT, "CAAP Content Analysis Report," www.act.org/caap/reports/pdf/content.pdf (accessed Sept. 28, 2009).
60. ACRL, *Information Literacy Competency Standards for Higher Education* (Chicago: ALA, 2000), www.ala.org/ala/mgrps/divs/acrl/standards/standards.pdf (accessed Sept. 28, 2009).
61. ACT, "CAAP Writing Essay," www.act.org/caap/tests/essay.html (accessed Sept. 28, 2009).
62. ACT, "Scoring System for Writing Essay Test," www.act.org/caap/tests/holistic.html (accessed Sept. 28, 2009).
63. Council for Aid to Education (CAE), "CLA: Returning to Learning," www.collegiatelearningassessment.org/index.html (accessed Sept. 28, 2009).
64. U.S. Department of Education, "A Test of Leadership: Charting the Future of U.S. Higher Education," 24.
65. Richard Shavelson, "The Spellings Commission Report and the Collegiate Learning Assessment," *Forum Futures 2008*, http://net.educause.edu/ir/library/pdf/ff0808s.pdf (accessed Sept. 2009).
66. ACT, "CLA Participating Institutions 2008–2009," www.cae.org/content/pdf/CLA_School_List_0809.pdf (accessed Sept. 28, 2009).
67. CAE, "CLA: Returning to Learning."
68. Richard Shavelson, "The Spellings Commission Report and the Collegiate Learning Assessment," 36.

69. VSA, "Information on Learning Outcomes Measures," 1.
70. ACT, "CLA Common Scoring Rubric," www.cae.org/content/pdf/CLA_Scoring_Criteria_(Jan%202008).pdf (accessed Sept. 28, 2009).
71. Richard Ekman and Stephen Pelletier, "Assessing Student Learning: A Work in Progress," *Change* 40, no. 3 (July/Aug. 2008): 14–19, www.changemag.org/Archives/Back%20Issues/July-August%202008/full-assessing-student-learning.html (accessed Sept. 29, 2009).
72. Anne Grosso de Leon, "The Collegiate Learning Assessment: A Tool for Measuring the Value Added of a Liberal Arts Education," *Carnegie Results* (Fall 2007): 1–12, www.carnegie.org/results/carnegie_results_fall07.pdf (accessed Sept. 29, 2009).
73. CAE, "Sample CLA Institutional Report," www.collegiatelearningassessment.org/files/CLA_0809_Institutional_Report_University_College.pdf (accessed Sept. 29, 2009).
74. CAE, "Sample CLA Student Level Data File," www.cae.org/content/pdf/CLA_0708_SS_University_College.xls (accessed Sept. 29, 2009).
75. Social Science Research Council, "Learning to Reason and Communicate in College: Initial Report of Findings from the CLA Longitudinal Study," (Brooklyn, NY: Social Science Research Council, Nov. 2008), www.ssrc.org/workspace/uploads/docs/CLA_Report.pdf (accessed Sept. 29, 2009).
76. CAE, "CLA in the Classroom," www.claintheclassroom.org/about (accessed Sept. 29, 2009).
77. Educational Testing Service (ETS), "New General Education Test Succeeds the Academic Profile," *Higher Ed Digest* 2, no. 1 (Oct. 6, 2005): 1, www.ets.org/Media/Newsletters/HED/2005/0905_article_3.html (accessed Sept. 29, 2009).
78. ETS, "ETS Proficiency Profile," www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=8370b0f0c2c55110VgnVCM10000022f95190RCRD&vgnextchannel=9dd546f1674f4010VgnVCM10000022f95190RCRD (accessed Mar. 9, 2010).
79. ETS, "ETS Proficiency Profile and the Voluntary System of Accountability," www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=63c62dabbdf39110VgnVCM10000022f95190RCRD&vgnextchannel=1bf546f1674f4010VgnVCM10000022f95190RCRD (accessed Mar. 9, 2010).
80. ETS, "ETS Proficiency Profile."
81. ETS, "MAPP User's Guide," (July 1, 2007), www.ets.org/Media/Tests/MAPP/pdf/MAPP_Users_Guide.pdf (accessed Sept. 29, 2009).
82. ETS, "ETS Proficiency Profile Score Usage," www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=f94aaf5e44df4010VgnVCM10000022f95190RCRD&vgnextchannel=01a646f1674f4010VgnVCM10000022f95190RCRD (accessed Mar. 9, 2010).
83. ETS, "ETS Proficiency Profile Comparative Data," www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=f54aaf5e44df4010VgnVCM10000022f95190RCRD&vgnextchannel=81957ced19a45110VgnVCM10000022f95190RCRD (accessed Mar. 9, 2010).
84. Association of American Colleges and Universities (AACU), "VALUE: Valid Assessment of Learning in Undergraduate Education," www.aacu.org/value/ (accessed Sept. 29, 2009).
85. AACU, "VALUE Rubrics," www.aacu.org/value/rubrics/index.cfm (accessed Sept. 29, 2009).
86. AACU, "Information Literacy VALUE Rubric," www.aacu.org/value/rubrics/pdf/InformationLiteracy.pdf (accessed Sept. 29, 2009).
87. Ibid., 2.
88. Telephone conversation with Terry Rhodes, vice president for quality, curriculum, and assessment, VALUE project (Nov. 23, 2009).