

Association of American Colleges and Universities

Report from the Project on Accreditation and Assessment

*Quality of the degree:
An alliance between faculty and accreditors*

John Nichols, Project Director,

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Colleagues

A project of the AAC&U Initiative,

Greater Expectations: The Commitment to Quality as a Nation Goes to College

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Preface

Despite a shared interest in the quality of undergraduate education, members of the higher education community rarely engage representatives from regional and specialized accrediting agencies in discussion of academic issues. This lack of dialogue can thwart the formation of natural alliances. In response, the Association of American Colleges and Universities (AAC&U) launched the Project on Accreditation and Assessment (PAA) in January 2000 as part of the Greater Expectations initiative. From its inception, the goals of PAA were to: (1) strengthen communication among the regional and specialized accreditors and between them and the higher education community; and (2) create a common vision for undergraduate liberal education and the baccalaureate degree.

PAA arose from issues raised at AAC&U's 1999 Network for Academic Renewal conference on general education. Faculty voiced concerns about the impact that external accreditation-driven requirements for assessment would have on their approaches to general education. Many expressed frustration in trying to balance the aspirations they had for general education with accreditors' calls for measurable outcomes; they feared a lowering of quality and rigor. Faculty also worried that such assessment would focus solely upon outcomes that could be easily evaluated through quantitative means.

Convinced that this was not what accreditors had in mind, AAC&U president Carol Schneider, then-Vice President Jerry Gaff, and John Nichols, NEH Distinguished Teaching Professor at Saint Joseph's College, joined together to create PAA. With funding from The Pew Charitable Trusts, it became part of AAC&U's Greater Expectations initiative. The five other constituent projects in Greater Expectations were designed to articulate the aims of a twenty-first century liberal education and identify the best practices for implementing improved learning for all undergraduate students; PAA's goals fit right in.

Nichols, appointed as a senior fellow at AAC&U to lead the project, spent the first four months visiting regional and specialized accreditors and the executives of higher education associations. During these visits, he voiced the faculty concerns and asked accreditors and

administrators about the likely impact of assessment on general education. He also described the PAA project and requested their participation. In a time of extensive activity related to the revision of accreditation standards, these accreditors saw the value of PAA and willingly joined the project. The final participant list included representatives from all six regional accrediting associations, four specialized accreditors, one national accreditor, the accrediting coordinator (the Council on Higher Education Accreditation or CHEA), and seven higher education associations. Some of the PAA members also held faculty or administrative positions on campuses.¹

Once formed, the PAA group explained its work as collaboration to provide a persuasive voice on behalf of an emerging concept of liberal education in the midst of current challenges.

The group's specific objectives were:

1. To assist **specialized** (professional program) accreditors in continuing a process of:
 - Identifying liberal education outcomes essential to their professional programs
 - Integrating those outcomes into professional curricula and standards
2. To assist **regional** (institutional) accreditors in:
 - Outlining specific learning practices that constitute high-quality education
 - Ensuring that robust general education, in collaboration with a major or concentration, remains central to the process
3. To facilitate **faculty** stewardship for both general education and major programs (including undergraduate professional programs), while encouraging new, collaborative and collegial modes of teaching and learning.
4. To provide **faculty** and **accreditors** with resources for assessing the quality of student academic achievement that could be used in accreditation self-studies.

In its meetings between May, 2000 and September, 2001, the PAA group members agreed on the value of aligning external assessments and institutional practices and on using both to promote a New Academy like the one proposed in the AAC&U report, *Greater Expectations: A New Vision for Learning as a Nation Goes to College* (AAC&U 2002a).² The following

final report from the project describes the resulting shared understandings that support a practical liberal education. It will be complemented by a forthcoming AAC&U publication.

PROJECT ON ACCREDITATION AND ASSESSMENT PARTICIPANTS

Regional Accreditors

Stephanie Bangert, Western Association of Schools and Colleges
John Dwyer, Southern Association of Colleges and Schools
Sandra Elman, Northwest Association of Schools and Colleges
John Erickson, Middle States Association of Colleges and Schools
Robert Froh, New England Association of Schools and Colleges
Cecilia Lopez, North Central Association of Colleges and Schools (now at Harold Washington College)

Specialized Accreditors

Kathryn Aberle, Accreditation Board for Engineering and Technology, Inc.
Milton Blood, Association to Advance Collegiate Schools of Business
Margaret Jackman, Commission on Collegiate Nursing Education
Antoinette Mitchell, National Council for Accreditation of Teacher Education

National Accreditor

George Lucas, American Academy for Liberal Education; Professor of Philosophy and Associate Chair, Department of Leadership, Ethics & Law, United States Naval Academy

Higher Education Associations

Barbara Cambridge, American Association for Higher Education
William Craft, American Conference of Academic Deans; Vice President for Academic Affairs and Dean of the College, Luther College
Judith Eaton, Council for Higher Education Accreditation
Joan Fiscella, Association for Integrative Studies; Bibliographer for Professional Studies, University of Illinois at Chicago
Fred Janzow, Council for Administration of General and Liberal Studies; Dean, School of University Studies, Southeast Missouri State University
B. Thomas Lowe, Association for General and Liberal Studies; Associate Provost and Dean of University College, Ball State University
Peggy Maki, American Association for Higher Education
Mary Beth Nowinski, American Association of Colleges for Teacher Education
Joan Stanley, American Association of Colleges of Nursing
John Nichols (Chair), Senior Fellow, AAC&U; NEH Distinguished Teaching Professor, Saint Joseph's College (IN)

Foreword

Dear Colleague:

I recommend this project report, *Quality of the degree: An alliance between faculty and accreditors*, to you for three reasons:

- It reaffirms the commitment of regional and specialized accreditation in assuring quality in liberal education.
- It explains the important connection between higher education and the value of the degree.
- It urges further attention to student achievement in liberal education on the part of faculty, academic administrators, and accreditors.

While commitment to general or liberal education has long been an important aspect of the work of accreditation, this project has been an opportunity for additional reflection on and reaffirmation of this key area. The result has been a clear message of commitment from the regional and specialized accreditors involved that, indeed, their expectations about the quality of liberal education does and should influence the ongoing work of institutions and programs.

All of the accrediting organizations participating in this project accredit higher education degree-granting institutions and programs. The work of AAC&U and these accreditors is in many ways an affirmation of the value of the degree and its centrality in our vision of an educated student. Indeed, the project complements the Council for Higher Education Accreditation (CHEA) statement on the value of the degree adopted in May 2001. In this statement, CHEA indicates that the degree is important for five reasons. These are:

- Developing and deepening the capacity to think
- Obtaining knowledge on which preparation for the future depends
- Acquiring a fuller understanding of cultures
- Strengthening the foundation for informed citizenship, participation in community life and public leadership
- Sustaining vocational and career goals.

Evidence of student achievement as a key consideration in assuring quality is a subject of major importance to higher education institutions and programs and the accrediting community. There have been many initiatives underway for a number of years. This project adds its important support and assistance to those engaged in obtaining this evidence with a particular emphasis on the significance of student academic achievement in relation to liberal learning.

Thank you.

Sincerely,

Judith S. Eaton
President
Council for Higher Education Accreditation

1: Context

Higher education at the turn of the twenty-first century is witnessing important external pressures and internal responses. More students than ever before seek some form of post-secondary education; they are diverse in age, ethnic backgrounds, and levels of preparation. Their expectations sometimes resonate with, and other times conflict with, the goals of the institutions in which they enroll. A rapidly changing and increasingly information-based economy stimulates this demand for education. Mobility is an established feature, with students moving from institution to institution during their undergraduate years and from career to career after completion. The presence of new technologies, the need to embrace both diversity and globalization, resource limitations, and the rise of for-profit educational providers also impact and help shape contemporary higher education.

Within this context, PAA identified areas of concern to its constituent members and areas of consensus.

Areas of concern

In 2000, accreditors, as the stewards of quality control in U.S. higher education, were in the midst of actively revising standards and seeking confirmation of institutional effectiveness. Including, as it did, representation from each of the six geographic regions that form the basis of *regional accreditation*, PAA heard about their shared challenge of how to manage demands for accountability of student academic achievement without imposing artificial processes, without quantification supplanting deep understanding of student learning, and without lowering expectations to the most basic outcomes that might prove the easiest to document. Related, too, was the larger issue of balancing institutional autonomy with a nationally shared, publicly endorsed set of outcomes of student learning that could guarantee to external stakeholders (e.g., the business community) the value of a college degree.

In revising standards and rethinking the accreditation process itself, the regional accreditors wanted to shift from an all-or-nothing mode of compliance to a more nuanced approach that placed institutions along a continuum of quality or developmental stages. This shift in

emphasis would support assessment for the purpose of improved learning and would make accreditation an activity that aimed to assure and advance the quality of higher education. In short, the goal was to turn regional accreditation into a process that added value to institutions, rather than functioning as external oversight imposed and endured every ten years.³

The *specialized accreditation* process, because voluntary rather than mandatory,⁴ has always been subjected to a rather severe cost/benefit analysis by individual colleges and universities: Is it worth the expense to meet specialized accreditation standards? Experiencing the same U.S. Department of Education pressures as the regional accrediting associations to quantify learning outcomes and use them as a basis for accountability, specialized accreditors had an even more difficult job of convincing faculty and administrators of the added value of the process. While strongly believing in programmatic integrity and quality, specialized accreditors needed to communicate to institutions their mutual interests.

PAA participants who were also faculty members noted tremendous financial pressure to do more with less, while adding documented assessment to their responsibilities. At the same time, they noted that their peers generally had little involvement in designing or managing the accreditation process itself. The PAA faculty participants exhibited strong ownership of teaching and learning—especially in the face of external accountability demands—as well as resistance to assessment if simply an end in itself rather than a means to improve student learning.

While struggling with the scope of faculty responsibility—whether holding individual professors responsible only for their courses, their majors, or their advisees would continue as standard practice—faculty members in PAA debated whether shared responsibility for all students at an institution could realistically exist. While individual faculty members have traditionally limited their responsibility to students within their disciplines or departments, PAA faculty participants felt that a new focus on outcomes could encourage their colleagues to embody a shared institutional purpose.

Finally, regarding the rise of for-profit credentialing and certificate programs, CHEA⁵ has been vocal in pointing out the differences between earning a college degree, with all its multiple benefits, and obtaining a more narrow credential. In 2000, CHEA published *Core Academic Values, Quality, and Regional Accreditation* (Eaton, 2000), which reminds accreditors of the stakes involved in the various forms of distance learning. The booklet centers on two questions:

1. Can higher education adapt to new students and new providers and still preserve core academic values (e.g., the curricular responsibility of faculty, collegiality, autonomy, general education)?
2. Will higher education have to compromise these values or risk becoming irrelevant?

Areas of Consensus

Interestingly and importantly, PAA recognized early on in its work that basic agreement existed on the broad outcomes of a baccalaureate degree, as well as on the need to make these outcomes the center of a quality undergraduate education. Schneider and Shoenberg, for example, in *Contemporary Understandings of Liberal Education*, described a pattern emerging nationally that they said showed “promise of providing a conceptual framework for undergraduate learning” (Schneider and Shoenberg 1998, 7). Faculty, despite frustrations with assessment measures, had come to a certain agreement on the goals for contemporary liberal education as including (1) the acquisition of intellectual skills or capacities; (2) an understanding of multiple modes of inquiry and approaches to knowledge; (3) the development of societal, civic, and global knowledge; (4) a basic knowledge of self and grounded values; and (5) the ability to integrate learning.

The PAA group felt part of such an emerging consensus, described in even more detail in the *Greater Expectations* report. In specialized accreditation circles, a more integrated concept of the undergraduate curriculum had begun to develop. As they shifted their focus from inputs (e.g., number of courses) to outcomes, in a move to advance assessment for accountability purposes, specialized accreditors realized that many traditional liberal education outcomes remain essential for twenty-first century professionals: effective communication; interpersonal and cognitive skills; ethical awareness; and knowledge of the human and natural

environment. Also essential are discipline-specific outcomes and, given the increasingly diverse world in which graduates live, cultural sensitivity.

Regional accreditors within PAA also stressed clear outcomes for student learning and found they shared a basic set with their specialized accreditation colleagues. To the discussion they added the need for qualitative as well as quantitative assessment mechanisms. Recent changes in regional accreditation have pointed institutions toward a broad and powerful understanding of undergraduate education. In the Western Association of Schools and Colleges (WASC) Standards, for example, the section on teaching and learning opens with the statement: “Baccalaureate programs [should] engage students in an integrated course of study of sufficient breadth and depth to prepare them for work, citizenship, and a fulfilling life.”⁶

From the national and accreditation-wide perspective, CHEA had been arguing for the value of the degree in a way that strongly resonated with the statements from faculty, specialized accreditors, and regional accreditors. Not only does a degree represent more hours of education than a narrowly focused vocational credential, but also greater breadth of study and a concentration on the development of the mind. More specifically, the degree reflects the presence of general education. A coherent and developmental general education program—complementing the major throughout the college experience— contributes crucially to a powerful, practical undergraduate education. While incoming students may have little understanding or appreciation of general education, graduates often value a substantive general education program as one of the most important components of their degrees.

The Position Adopted

Out of both specific concerns and points of agreement, PAA participants formed a model of undergraduate liberal education derived from, and supported by, accreditors and faculty alike. In this model, the depth of a major works in concert with a breadth ensured by a coherent, robust general education program. In concert with the vision set forth in the *Greater Expectations* report, the PAA process model views liberal education as practical and purposeful. Important for both accreditors and faculty, the PAA model advocates developmental assessment for continuous improvement. In addition:

1. The model demands that faculty take a holistic view of their responsibilities. Those who teach general education and those who teach major courses must collaborate on student growth and development.⁷
2. The model places student learning at the center, while acknowledging that strong curriculum, pedagogy, administrative support, and leadership are crucial to support learning.
3. The model views students on the threshold of graduation as the key point for accreditation-based assessment. The integrated performance of students in capstone courses or completing senior projects is one of the strongest indicators of sophisticated educational outcomes.

What Follows

PAA members envisioned a strong twenty-first century undergraduate education as a collaborative venture between general education and the major or professional program. Collectively, they identified five elements that comprise a process model for this kind of education: mission, outcomes, curriculum, pedagogy, and assessment. These elements are interconnected insofar as mission influences the choice of outcomes, which then help shape curriculum. The curriculum, in turn, impacts the choice of pedagogical practices. Assessment of curricular programs, pedagogy, and student learning generates information with which to revisit outcomes and determine how well goals are being met. At that point, if needed, colleges and universities may use assessment data to reshape mission and outcomes, or, most often, amend the curriculum and teaching methods to better achieve the mission and outcomes already in place.

The remainder of this report describes these five elements, shaped by the conversations between the faculty members and accreditors at the center of the PAA group. Chapter 2 focuses on mission and outcomes in the context of collegial responsibility, while Chapter 3 discusses collaborative efforts in curriculum and pedagogy that can create purposeful learning pathways for students. Chapter 4 examines the kinds of assessment that sustain and enhance learning in order to create a learning-centered institution. Chapter 5 responds to a critical question—what would be different on campuses and in accreditation processes if the PAA model of undergraduate education were operationalized? Finally, an appendix contains promising examples of integrated senior-level assessments useful for both accreditors and institutions, followed by references and related Web sites.

2: Sharing the Commitment to Learning: Mission and Outcomes

It is common practice for administrators and faculty to use an institution's mission statement to express the purpose of the baccalaureate degree. To assist campuses in articulating liberal education goals through use of a mission statement, PAA participants developed a statement broad enough to be adapted by institutions of various types, as follows:

Liberal education in the twenty-first century is uniquely capable of preparing students for work, citizenship, and lifelong learning, as well as for a career. This practical, engaged liberal education has as its basis *collaboration* between general education and the major.

Liberal education frees students from narrowness. It empowers them to make critical judgments about what experts say and develops their sensitivity to other cultures. It enables students to grow continuously, in appreciation of the broad range of human intellectual and artistic endeavors.

The Transformative Power of Liberal Education is Practical

The commitment to liberal education as a collaboration between general education and the major entails an understanding of “liberal” as compatible with, and indeed essential to, “practical.” For centuries, philosophers and leaders have noted that liberal education, classically understood as the development of the mind, is transformative. In *Nicomachean Ethics*, Aristotle argued that what is good in itself is also useful, but not the other way around. In the nineteenth century, Cardinal John Henry Newman stressed that a mind-sharpening liberal education was the most practical education achievable (Newman 1982). And early in the growth of the U.S., educators found ingenious ways of combining the traditional liberal arts with the need in the new nation for practical intelligence.

Moving through this philosophical discussion, PAA agreed that a liberal education for the twenty-first century is of primary value to students because it transforms them; such an education develops capacities for critical judgment to handle not only what is known, but

what is yet unknown in a rapidly changing culture and society. As a group, PAA acknowledged the important practical value of these intellectual capacities.⁸

What is particularly new in this discussion is the reverse movement—from the practical to the liberal—and this has sprung in large measure from recent conversations among specialized accreditors. Accreditors in nursing, engineering, business, education, and pharmacy fields have come to understand a new, more bi-directional relationship between liberal education outcomes and proficiency in a profession. In reflecting upon the differences between high-quality and low-quality practice in their fields, they determined that specific liberal education outcomes are constitutive of these quality differences. Support for this concept can be found throughout specialized accreditation literature, including the American Association of Colleges of Nursing's (AACN) *Essentials of Baccalaureate Education for Professional Nursing Practice*.⁹

Specialized accreditors are tapping into liberal education's more holistic approach to career preparation. A liberal education-based degree prepares students for the higher-level skills relevant to the succession of jobs that form a career—from the ability to work in and manage diverse groups to the critical thinking necessary for strategic planning. This kind of degree also prepares students for active citizenship and life-long learning. Such broader preparation has at its center a coherent general education program, connected to a major or professional program.

This conception of undergraduate education calls for a reconsideration of prevailing assumptions in the academy. Every major, from liberal arts to professional programs, needs to connect to general education, yet faculty rarely conceive of student learning as a shared endeavor across campus. Connections—between the major and general education as well as among the disciplines—cannot occur without faculty recognizing that their responsibility to student learning extends beyond individual disciplines and departments.¹⁰

Integration of Outcomes

PAA participants spent time investigating possible relationships among liberal education, general education, and the major—both liberal arts majors and the professional fields now selected by more than half of all college students. While participants recognized that the major or professional program and general education each have distinct outcomes, they agreed that these outcomes should complement each other and be *integrated*. This chapter provides examples of the integration of these outcomes, such as in the Boeing Corporation’s description of the “attractive engineer” and in the description of outcomes of a quality business program.

Collaboration and Integration: The Middle States Association

In *Characteristics of Excellence*, the revised standards approved in 2002 by the more than 500 institutions accredited by the Middle States Association’s Commission on Higher Education, the standard on General Education has been expanded, clarified, and updated. The actual standard on General Education (#12) reads: “The institution’s curricula are designed so that students acquire and demonstrate college-level proficiency in general education and essential skills, including oral and written communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy.”

In the narrative section that follows the standard, the Commission highlights several important qualities of a strong liberal education. First, as a component of liberal education, a general education program should be “developed, owned, and reviewed by the institution’s faculty” and should be “purposeful, coherent, engaging, and rigorous.” Second, there should be various institutional approaches to general education.

Third, the Commission stresses the need for integration between general education and the major. The standards note, “[g]eneral education skills may be taught or developed as part of courses in the major, in separate courses, or through a decentralized distribution. However, the skills and knowledge derived from general education and the major should be *integrated* because general education and study in depth, *together*, comprise a quality undergraduate education.” Similarly, the text notes that institutions should “strike an appropriate balance between specialized and more general knowledge. The institution’s ability to demonstrate that its students are able to integrate and apply, in different contexts, the core knowledge and skills learned in their coursework is a critical component of successful undergraduate educational programs.”

Finally, the Commission specifically addresses the scope and value of general education: “General education incorporates essential knowledge, cognitive abilities, and an understanding of values and ethics, and it enhances students’ intellectual growth. General education programs draw students into new areas of intellectual experience, expanding their cultural and global awareness and sensitivity, and preparing them to make enlightened judgments outside as well as within their academic specialty.”

In the twenty-first century, college graduates will grapple with increasingly rapid technological change, complex information management, and new forms of global

interdependence, alongside more traditional notions of democratic participation and lifelong learning. Determining learning outcomes that will enable graduates to navigate this complexity successfully is a formidable challenge for educators. However, the higher education literature suggests a high degree of convergence on what these outcomes ought to be, and PAA members looked to this rich literature to shape the list of outcomes the group agreed upon through discussion. That this particular list was derived both from accreditors and faculty attests to its potential sustainability, and campuses should plan on their own dialogues with various stakeholders in the process of determining local versions of liberal learning outcomes.

Deriving Outcomes

As Peter Ewell recently noted, “At some institutions... ‘goals’ for general education have been established largely for the purposes of designing assessments, not for the purposes of guiding pedagogy and instructional design” (Ewell 2001, 22). However, intentional practice would dictate otherwise. It is crucial in a process of curricular or pedagogical planning to begin with the end result: to determine mission-derived outcomes first. Faculty and administrators should begin by collectively agreeing on the qualities they would like to see in a graduate who earns a high-quality undergraduate degree from their institution. Campus members can then use these expectations to shape educational culture, curriculum, and pedagogy, as well as assessments.

While rarely mentioned specifically in a campus’s mission statement, these outcomes—qualities characteristic of a graduate—should be derived from it. Some may be particular to an institution—they are the distinctive “mark” a school places upon its graduates—and the PAA group noted that all accrediting agencies allow a great deal of individual discretion in their articulation. At the same time, the general public and accreditors have broader expectations for college graduates, while disciplinary associations and specialized accreditors expect specific outcomes from students in professional programs. The overall mix of institutional, regional, and specialized expectations—to differing degrees—impact campuses and the faculty and administrators who determine outcomes.

Often, college catalog statements about general education come very close to describing the ideal educational outcomes for a graduate of the institution, once major-specific outcomes are added. However, few students and few faculty, in their daily work, recognize general education is central. As Frederick Rudolph pointed out twenty-five years ago, it is very often “the concentration [that is] in charge of the curriculum” (Rudolph 1977, 248). Given this mindset, it is even more groundbreaking that WASC’s new senior standards devote significant space to broad liberal education outcomes, which are most often developed through strong, coherent general education programs. Such statements provide campus administrators and the faculty involved in educational reform with external validation for increased attention to general education and enhanced collaboration between general education and the majors.

A Taxonomy

PAA participants believe that educators and accreditors needed a common language with which to discuss student learning outcomes. Ewell’s CHEA monograph, previously cited, proposes “precising definitions”:

Outcome – something that happens to an individual student as a result of attendance at a higher education institution

Learning – particular levels of knowledge, skills, and abilities that a student has attained at the end of engagement in a particular set of collegiate experiences

Knowledge – particular areas of disciplinary or professional content that students can recall, relate, and appropriately deploy

Skills – the learned capacity to do something

Attitudinal outcomes – changes in beliefs or development of certain values

Abilities – the integration of knowledge, skills, and attitudes in complex ways that require multiple elements of learning

Competencies – the specific levels of performance that students are expected to master

Outcomes Shared by the PAA Group

Given the convergence about outcomes in the higher education literature, and starting with its prime commitment to collaboration between general education and the major, PAA reviewed both that literature and existing accreditation standards. From that review, it selected as outcomes shared by the group those related to “liberal,” “professional,” and “connected” learning; outcomes at once challenging, developmental, cumulative, and able to be aligned with institutional goals for student achievement.

While PAA drew most heavily from *Contemporary Understandings*, previously cited, the group consulted four other texts that deserve mention. Stark and Lowther, in *Strengthening the Ties That Bind* (1989), found ten “ties” between liberal arts education and the professions: communication, critical thinking, context, aesthetics, professional values, professional ethics, adaptive ability, leadership ability, scholarly concerns, and lifelong learning. The Middle States Association calls for an undergraduate degree program that strikes an appropriate balance between specialized and general learning, and one that also demonstrates how students can connect the two spheres. Thus, general education should (1) integrate with the major; (2) promote student learning and proficiency in the areas of oral and written communication, scientific and quantitative reasoning, technological capabilities appropriate to the discipline, and information literacy; and (3) incorporate the study of values, ethics, and diverse perspectives.

The WASC senior standard for undergraduate degrees is worth citing at some length because of the new equilibrium it establishes between the major and general education. According to the WASC senior, a baccalaureate program should:

- Engage students in an integrated course of study of sufficient breadth and depth to prepare them for work, citizenship, and a fulfilling life
- Ensure the development of core learning abilities and competencies including, but not limited to, college-level written and oral communication, college-level quantitative skills, information literacy, and the habit of critical analysis of data and argument
- Actively foster an appreciation of diversity, civic responsibility, the ability to work with others, and the capability to engage in lifelong learning

- Ensure breadth for all students in the areas of cultural and aesthetic, social and political, as well as scientific and technical knowledge expected of educated persons in this society
- Engage students in an in-depth, focused, and sustained program of study

The *Greater Expectations* report presents another fruitful approach to articulating a set of outcomes toward strong student learning. A central concept in the report is that of the purposeful or “intentional” learner. The report developed a set of 20 outcomes organized around three characteristics of such a learner.¹¹ The main difference between the *Greater Expectations* outcomes and those derived from PAA, outlined below, lies in the emphasis PAA gives to the means of reaching the outcomes, undoubtedly due to the presence of specialized accreditors within this group.

Based on extensive review and conversation, PAA participants generated the following list of outcomes encompassing knowledge, abilities, and performances expected of a student completing a strong, liberal education-based undergraduate degree. Again, these are suggested as useful markers that can guide faculty and administrators as they take on the important local work of developing curriculum, pedagogy, and assessments that lead to powerful learning.

Core proficiencies

These proficiencies are similar to what Ewell defines as “skills.” Basics might be covered in a separate, lower-level course, but the expectation is that faculty would reinforce and help students further develop these skills in many courses throughout the curriculum. King’s College (PA) and Indiana University-Purdue University, Indianapolis have programs that involve precisely this kind of faculty responsibility.

Core proficiencies – can be developed in any course and by the whole faculty

<i>Communication</i>	Speaking/listening, writing/reading, visual, artistic
<i>Reasoning</i>	Qualitative and quantitative
<i>Information literacy</i>	Accessing, evaluating, and using information; skill in determining sources to consult
<i>Adaptability</i>	Resourcefulness and flexibility in various contexts
<i>Application</i>	Applying knowledge appropriately
<i>Developed through...</i>	– constant practice all across the curriculum

Inquiry capacities

These capacities allow students to use areas of content in active ways – the “knowledge” component of Ewell’s definition. These capacities, largely in the cognitive arena, relate to both disciplinary and interdisciplinary content. Saint Joseph’s College (IN) and Worcester

Polytechnic Institute (MA) have upper-level projects that require students to demonstrate such capacities.

Inquiry capacities – disciplinary and interdisciplinary and based on faculty collaboration

<i>Critical thinking</i>	<i>Intellectual creativity</i>
<i>Lifelong learning</i>	<i>Systemic thinking</i>
<i>Scientific reasoning</i>	<i>Historical perspective</i>
<i>Aesthetic appreciation</i>	
<i>Developed through...</i>	<ul style="list-style-type: none"> – expertise gained in a major – engagement in various types of disciplinary inquiry – integrative work in connecting courses and fields

Orientation and application

Within Ewell’s definitions, this is the “ability” to put knowledge and skills to work in coping with the complexities and challenges of new situations. As stated earlier, liberal education exposes students to alternatives and the need to make commitments in the face of multiplicity; enlarges the social unit to include ever-wider human groupings; and poses questions about wise action with regard to nature. Alverno College’s way of developing and tracing such competencies in students is a primary example of this portion of the PAA outcomes statement.

Orientation and application – proficiencies and capacities exhibited in dealing with:

<i>Self</i>	Self-understanding and values; self-assessment and responsibility
<i>Society</i>	Individuals (civility) Family, groups Organizations, systems Diversity, including a range of cultural and artistic creations Communication across world cultures, cultural difference, and linguistic barriers
<i>Natural world</i>	Scientific laws and theories

Adaptation – the Case of Specialized Accreditors

PAA participants understood the need for campuses to adapt these outcomes to their specific missions and context. Indeed, PAA members themselves adapted this list to match their specific circumstances. For example, in the midst of project conversations and as they were revising their standards, the Accreditation Board for Engineering and Technology (ABET) reviewed a letter from the Boeing Corporation outlining the “attributes of an attractive engineering graduate.” The letter listed nine attributes; only two of the nine were directly

related to engineering knowledge and skills, while the other seven focused on broader liberal learning outcomes. This external message confirmed PAA's preliminary list of outcomes, and when ABET revised accrediting standards, the resulting eleven outcomes significantly emphasized broad liberal learning. Like the Boeing attributes, they are a mixture of specific engineering skills and broader capacities, as follows:

- a. An ability to apply knowledge of mathematics, science, and engineering
- b. An ability to design/conduct experiments, and to analyze and interpret data
- c. An ability to design a system, component, or process to meet desired needs
- d. An ability to function on multi-disciplinary teams
- e. An ability to identify, formulate, and solve engineering problems
- f. An understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand the impact of engineering solutions in a global and societal context
- i. A recognition of the need for, and an ability to engage in lifelong learning
- j. A knowledge of contemporary issues
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Similarly, AACN's *Essentials* document describes both professional nursing outcomes and liberal learning outcomes as necessary for high-quality nursing practice. They include:

1. Developing higher order problem-solving and critical thinking skills
2. Integrating concepts from behavioral, biological and natural sciences in order to understand self and others
3. Interpreting and using quantitative data
4. Using the scientific process and scientific data as a basis for developing, implementing, and evaluating nursing interventions
5. Applying knowledge regarding social, political, economic, and historical issues to the analysis of societal and professional problems
6. Communicating effectively in a variety of written and spoken formats
7. Engaging in effective working relationships
8. Appreciating cultural differences and bridging cultural and linguistic barriers
9. Understanding the nature of human values
10. Developing and articulating personal standards against which to measure new ideas and experiences
11. Appreciating and understanding the character of professions.

In addition, liberal learning outcomes are further reinforced within core nursing competencies, which are identified specifically as critical thinking, communications, assessment (gathering information about patients, including individuals, families, communities, and populations), and technical skills. In fleshing out the details of the kinds of knowledge that the professional

nurse must have, ethics and diversity are emphasized. The standards of the accreditor for baccalaureate nursing, the Commission on Collegiate Nursing Education, include the expectation that program outcomes will identify how liberal arts and other non-nursing components are integrated into and further developed in the nursing curriculum.

Accreditors of pharmacy programs have also recently revised professional preparation outcomes in light of the human interaction and ethical components inherent in the pharmacist's role. Both accreditors and the general public are giving new recognition to pharmacists as caregivers, helping the people they serve make important health decisions. Within this framework, liberal learning outcomes such as critical thinking, communication, ethical decision-making, social responsibility, human interaction, and continuous learning become central to pharmacy education. This professional preparation relies on both liberal education and professional education, integrated to advance these outcomes across the entire curriculum (Zlatic 2000).

Within the context of PAA's work, The Association to Advance Collegiate Schools of Business (AACSB) International proposed a list of hypothetical outcomes for a quality business program. Six months later, while preparing new global standards for AACSB accreditation, the draft list resurfaced. Since the standards needed to be applicable in international settings, they could not use a U.S. schema of courses or credit hours. Instead, the AACSB committee wrote a standard for business programs where a graduate should "...achieve general knowledge and abilities for successful performance in a complex environment requiring intellectual ability to organize work, make sound decisions, and react successfully to unanticipated events" and "...develop learning abilities suitable to continue higher level intellectual development." The business school, in turn, "...specifies the general knowledge and abilities that its graduates achieve." Accompanying this standard are general education learning outcomes business schools might adopt; five of the six are broad liberal education outcomes. All six derive from PAA's work:

1. Communication abilities
2. Analytic skills
3. Cultural understanding and flexibility
4. Ethical understanding and reasoning

5. Reflective thinking skills
6. Business-specific knowledge and abilities.

The general education part of a liberal education contributes important content; necessary breadth; humane values; and the ability to appreciate, critique, and use knowledge in a variety of contexts—political, economic, scientific, cultural—that reflect disciplinary modes of thinking. The broad PAA curricular goal, as the examples above attest, is to integrate general education and professional or major-related courses into a single program of study. The next chapter focuses on the ways in which curriculum and pedagogy can foster this kind of integration.

COMMENTARY

Liberal Studies and Professional Studies

In recognition of recent and emerging changes in the health care world, the Commission on Collegiate Nursing Education (CCNE), the nationally recognized agency that accredits baccalaureate and master's degree programs in nursing, is clearly supportive of a solid liberal studies education for graduates from its programs. Today's professional nurses are involved in care giving, not only in acute care situations in the hospital, but in the community and in broader settings where a liberal studies background is as important as professional skill.

As a result of this expansion of care and responsibilities, CCNE has incorporated into its accreditation standards criteria that clearly relate to the integration of liberal studies into the professional core content. Evaluation teams are expected to determine whether or not the nursing program under review is successful in doing so. While examining didactic courses and clinical practica, the team will look at how content is sequenced and how it builds in complexity throughout the program. It looks not only at the nursing component of the program, but at the liberal studies component as well, to see if it is designed to build in depth and complexity as the student moves through the program.

In a recent report analyzing a program's compliance with the integration of liberal studies with nursing courses, an evaluation team wrote:

“Objectives in nursing courses reflect that nursing knowledge is built upon a foundation of knowledge from the arts, humanities, and sciences. For example, in a course on nursing education and practice, one objective is ‘Analyze social and ethical issues as they relate to nursing practice and health care delivery.’ This objective builds on the knowledge base that students have acquired in introductory sociology and ethics. Another example is an assignment in the obstetrics course to create care plans for clients that illustrate an understanding of developmental psychology.”

It is the purpose of CCNE to assess the degree to which nursing programs achieve their stated mission, philosophy, and goals/objectives, in congruence with those of the home institution. It is expected that all of the programs it accredits will have a vision of the liberally educated nurse. CCNE is most supportive of collaboration between general education faculty and professional faculty, in order to achieve the goal of producing graduates capable of meeting the challenges of the twenty-first century. As a nursing dean stated at a recent national meeting, “The baccalaureate in nursing *is* the liberal arts!”

—MARGE JACKMAN, Associate Director, CCNE

3: Creating Pathways to Learning:

Curriculum and Pedagogy

It is from the very core of influence over curriculum and standards that a faculty derives its responsibility for learning outcomes. Yet, teaching and learning are human interactions, and thus the responsibility for actual learning—for achieving outcomes—is shared between teacher and learner. The move to create four-year developmental outcomes at King’s College (one of the institutions most advanced in the process) sprang from a student’s comment to the academic vice-president: “There’s more teaching going on here than learning, and you ought to do something about that!” (pers. comm.).

With a clear vision of how an “educated graduate” relates to the context of the institution (“Mission”), and guided by a list of the learning-centered descriptors of such a person (“Outcomes”), a faculty’s task becomes to create the structures (“Curriculum”) and the interactions (“Pedagogy”) that will likely produce the desired outcomes. PAA participants discussed curriculum in detail and generated a list of five principles for curriculum design that would likely foster the outcomes agreed upon. The group devoted less time to pedagogical practices, given the many strong examples already in the higher education literature.¹²

CURRICULUM

The following principles evidence the group’s consensus on the need for integration between general education and the major. These principles should be considered a “blueprint” rather than a directive, given the imperative of applying them in particular contexts governed by mission and outcomes. They are influenced by the best ideas of the past 20 years on the respective roles of general education and the major, and they can help produce a curriculum of “purposeful pathways of learning”¹³ for students, readying them for the complexities of the twenty-first century.

Principles of curriculum design

1. *Integration of general education and the major, including professional programs, characterizes liberal education in the twenty-first century.*

Integrative teaching strategies, program design, and capstone experiences—in both general education and the major—all work together toward developing in students the capacity to pull from various bodies of knowledge and methodologies to solve complex problems.

2. *Every baccalaureate degree has a general education component that enhances majors and professional programs.*

General education is a central curricular component that develops knowledge in various areas and cultivates skills in several methodologies. Students draw on the learning gained in general education for their major and professional program courses. Conversely, additional experiences in the major deepen and enhance learning of liberal education outcomes that form the core of general education.

3. *The general education component of the degree...*

Is purposeful. Purposeful general education has a clear rationale related to institutional mission that is transparent to both faculty and students.

Is rigorous and coherent enough to enable students to reach designated learning outcomes. The general education curriculum should be intellectually challenging, relevant both to the disciplines and to the world, and intentionally structured to maximize student learning over time.

Ensures breadth. General education should expand students' range of knowledge and cultivate multi-faceted intellectual growth by involving them in the arts, humanities, mathematics, sciences, and social sciences.

Fosters depth. Through strong general education, students deepen their intellectual skills, their ability to translate knowledge into different contexts and, in the words of one accreditor, their ability “to make enlightened judgments outside as well as within [their] academic specialty.”

Is the responsibility of all faculty. Whether teaching general education, major, or professional program courses, faculty take responsibility for shared, articulated liberal education outcomes. They design general education courses or experiences that enrich major and professional study.

The institution supports faculty in this endeavor by providing sufficient personnel, budget, faculty development, and other resources.

4. *The major or professional program's design aims at both depth of study in one particular field and engagement with multiple perspectives that inform the intellectual complexity of the twenty-first century.*

The program takes seriously the partiality of its vision and therefore structures interactions with other disciplines. In addition to expertise in the field, learning outcomes for majors and

professional programs include the abilities to translate among disciplines, critique materials from other areas of study, and synthesize learning across disciplinary boundaries. Semester-by-semester integration of general education and the major advances these outcomes.

5. The institution's commitment to ongoing quality enhancement requires assessment of student learning in general education, in the major and professional programs, and in their instances of integration.

Accomplishing this objective requires clear and explicit articulation among institution-specific learning outcomes, major/field outcomes, curricular design, pedagogy, and assessment methods.

General Education

The most recent wave of general education reform has as one of its starting points the book *A Quest for Common Learning* (Boyer and Levine 1981). This movement has engendered a large body of literature, and a number of publications¹⁴ have listed broad goal statements about general education, including:

- General education has clear purposes that relate to institutional mission
- General education extends throughout all four years. It has depth as one of its goals
- Courses designed specifically for general education serve broad learning better than introductions to disciplines
- General education honors specialization while working to overcome fragmentation
- There is rigor to general education; it requires sophisticated work in capstones
- Group learning is at least as important as individualized learning

A good metaphor for the end result is a “jazz combo”¹⁵: graduates have their own specialty, but can both support and build on the contributions of others.

The publication *Strong Foundations: Twelve Principles for Effective General Education Programs* (AAC&U 1994) reported on the experience of a variety of institutions that had invested heavily in general education reform. Six of the twelve principles express what is *distinctive* about general education—in contradistinction to all the other programs at an institution—and are summarized as follows:

The vision that provides identity for general education distinguishes it from any academic major in the institution, in that general education seeks coherence among the various ways of knowing, acknowledges its value commitments and moral-political involvements, and makes use of all the richness to be found in the lived experience of students. In regard to implementation, the distinctive aspects are the wide-ranging support that is required from all parts of the academic community to fulfill the

purposes of strong general education, the new role that faculty accept in working to develop their own integrative skills, and the use of outside-the-classroom experiences at the service of student growth and development (AAC&U 1994, 56).

Regional accreditors have insisted that institutions pay attention to general education, especially regarding the coherence it brings to a student's undergraduate experience. A brief review of the various regional accrediting agencies' statements and requirements reveals some general sentiments:

- General education is what makes the educated person, by means of breadth and coherence
- General education must involve a substantial core and help the overall curriculum achieve balance vis-à-vis the specialization of the major
- Attention to general education translates into a substantial number of credit hours, from 30 hours (Southern Association, Middle States Association) to one-third of the degree (New England Association) to 45 hours (Western Association)
- Institutions must document the centrality of general education

What are the contributions of general education to the outcomes listed in the preceding chapter? Students may need to be instructed in the basics of the *core proficiencies* in lower-level courses, but it is the entire faculty's responsibility to reinforce, apply, and extend the mastery of these proficiencies. Engineers need to continue writing in their engineering projects and discussing how their proposed solutions relate to political and economic contexts. Nurses need to continue writing about healthcare situations and deliberating about critical cultural, ethical, and religious issues that arise in their work. It takes an entire collegium to educate an engineer, a nurse, or, indeed, graduates entering into any career.

Ideally, *inquiry capacities* would be developed in the major as well as in the general education program. Through a depth of study in the major, a student would gain a solid grasp of a discipline and its ways of gathering evidence, testing propositions, and making sense of human experience. Through general education, the same student would gain a sufficient grasp of the ways that other disciplines work—their kinds of data, evidence, testing of hypotheses and accomplishments—to better deal with the complexities of the twenty-first century.

Practice in the *application* of these proficiencies and capacities to the self, society, and nature ultimately provides students with the tools needed to cope with the complexities and

challenges of new situations. These instances of practice need to be planned into the curriculum, modeled by the faculty, and required in increasingly challenging assignments leading to a culminating capstone experience. With a commitment to this kind of cumulative experience for students, loose distribution models of general education no longer seem to be the most effective curricular design.

The Major

The starting point for reflecting on the major's role in a liberal education curriculum is recognizing its "own necessarily partial vision" (AAC&U 1991, 5). Each discipline allows the viewing of human experience from a particular perspective. As Stephen Jay Gould noted, "...disciplines are exacting. All gain strength, respect, and acceptance by working honorably within their bounds and knowing when transgression upon other realms counts as hubris or folly" (Gould 1991, 5).

Gould's quote acknowledges that limits are a source of strength in a discipline, and there are borders to every way of knowing. By extension, a fuller understanding of human experience and the world would come from a plurality of ways of knowing. Indeed, a major necessitates complementarity, and as evidenced in fields such as engineering, nursing, business, and many others, the major alone cannot do the required job of preparing students for high-quality performance in the professions. The major requires connection with general education just as general education needs to have students pursue in depth some particular area of study.

Thus, the PAA group agreed that the necessary partiality of the major is complemented and completed by the centrality of general education in a robust vision of twenty-first century liberal education. While curriculum reform for many decades often occurred in isolated pieces, today's calls for assessment and a clear understanding of the complementary functions of general education and the major; further, it requires the academic community to adopt a continuous improvement model for curricular change.

COMMENTARY

Curricular Design for the Future

The “blueprint” contained in this chapter reflects discussions similar to those within the Accreditation Board for Engineering and Technology (ABET) back in the early 1990’s. Employers, parents, faculty, and ABET were concerned that the graduates of the programs were insufficiently equipped to enter their chosen professions. As a result, ABET engaged in a significant reform of the criteria used to evaluate the quality of educational programs in engineering, technology, computing and applied science. The result was an expectation of an integrated program that went beyond that acquisition of technical knowledge and skills.

Principle 4 of the curriculum blueprint contained in this chapter states, “The major or professional program has a design that aims at both depth of study in one particular field and engagement with multiple perspectives that inform the intellectual complexity of the twenty-first century.” For ABET, it was clear that we were doing an excellent job of preparing our students to work in the twentieth century, not the twenty first. What distinguishes the two centuries is the ability to make informed decisions in an increasingly complex world. Technological literacy is a crucial element in the achievement of this goal.

Technological literacy is not the same as technical competency. Technological literacy is more a capacity to understand the broader technological world in order to make informed decisions as employees, as consumers, and as citizens. For many issues, the technological component cannot be separated from the social, ethical, legal, environmental and political aspects. A purposeful and thoughtful curriculum that integrates and connects the general education and the major can result in graduates who are technically literate and not just skilled computer users. To foster the development of the “educated person” for the twenty-first century, we must ensure that the curriculum addresses technological literacy for all our students, not just engineering and science majors.

KATHRYN ABERLE – Associate Executive Director,
Accreditation Board for Engineering and Technology

COMMENTARY

Integrative Curricula

The Association for Integrative Studies (AIS) has developed a set of guidelines for interdisciplinary general education that addresses curriculum, teaching and learning, and the roles of faculty and administrators central to such programs. These guidelines recognize that there are many models for integrating interdisciplinary general education with the major. Among them, two nicely exemplify this process.

At Fairhaven College, in addition to their core courses, students develop their own major with oversight from a three-person faculty committee drawn from across the university. Several features of this program stand out: high initiative and responsibility from the students; explicit connections between core and major courses; involvement of faculty across the institution; and a combination of student self-assessment and faculty assessment of the students' long-term work.

The interdisciplinary humanities program at the University of North Carolina at Asheville is a twenty-credit-hour minor that incorporates insights and information from humanities, social sciences, and natural sciences. Strong features of this program are its explicit interdisciplinarity, its sequencing of courses that may reach over all four years, and its in-depth assessment program that addresses student progress from the first to the fourth course in the program.

These two programs suggest principles for connecting general education and the major consistent with the PAA blueprint.

1. Together students and faculty make explicit connections among ideas, courses, disciplines, and the parts of the curriculum (the major and general education). Faculty interaction encourages and drives the integration.
2. Connections come from both course content and educational processes.
3. During and at the completion of their work, students demonstrate outcomes that illustrate explicit integration. The programs use a variety of processes to assess outcomes.

JOAN B. FISCELLA – AIS President, 1999-2001;
Bibliographer for Professional Studies, University of Illinois at Chicago

PEDAGOGY

Psychological and educational research about learning styles and cognitive processes, general education reform, new computer technologies, and assessment have all contributed to a significant body of literature on effective teaching practices. Such pedagogies include innovations in faculty-to-faculty approaches (e.g., team and interdisciplinary teaching), student-to-student relationships (e.g., joint projects, peer assessment), and faculty-to-student interactions (e.g., active learning through the posing and solving of problems). PAA reflected on the context for these innovations, as well as the generative principles that guide their development.

Context

Pressures on secondary education can constitute barriers to college readiness, which in turn affects the quality of learning at the undergraduate level. With regard to secondary education, the *Greater Expectations* report notes that “learning is more than the simple acquisition of discrete facts...[and] also more than the completion of a fixed number of courses” (AAC&U 2002a, 12). Higher levels of learning will take place, the report contends, when schools abandon a “one-size-fits-all approach to learning” and teachers are encouraged to “employ a range of instructional methods to match their students’ learning styles” (AAC&U 2002a, 13). Likewise, at the college level, students face a number of barriers to quality learning, including teaching methods unsuitable to the learning outcomes defined. The report notes that “interest in how learning occurs has remained largely confined to psychologists and schools of education; colleges and universities...rarely assist faculty members in any sustained way to become outstanding instructors” (AAC&U 2002a, 16-17).

Recommendations in the Literature

In October 1984, the National Institute of Education (NIE) published *Involvement in Learning*. The study suggested, “the quality of undergraduate education could be significantly improved if America’s colleges and universities would apply existing knowledge about three critical conditions of excellence:”

- 1) Student involvement—the time and effort students put into learning
- 2) High expectations—publicized and challenging objectives for students

3) Assessment and feedback—ongoing monitoring of progress (NIE 1984, 17).

To anchor these conditions in actual practice, the NIE study outlined 20 specific recommendations for how faculty and administrators could take action to increase student access to excellence (NIE 1984, 23-61). Additional suggestions targeted other members of the higher education community.

A shorter list of methods to enhance undergraduate student learning was proposed by James Ratcliff (Gaff, Ratcliff, and Associates 1996, 164).¹⁶ He cites 12 aspects of “good practice in undergraduate education”:

1. Create high expectations for student learning
2. Provide coherent, progressive learning
3. Create synthesizing experiences
4. Integrate education and experience
5. Create active learning experiences
6. Require ongoing practice of skills
7. Assess learning and give prompt feedback
8. Plan collaborative learning experiences
9. Provide considerable time on task
10. Respect diverse talents and ways of knowing
11. Increase informal contact with students
12. Give special attention to the early years.

Schneider and Shoenberg’s five liberal learning goals, cited in the first chapter of this monograph, also demand a different set of pedagogical practices. Instead of professors playing the role of “expert,” they become motivators and mentors who guide students in acquiring skills and methods for learning. *Contemporary Understandings*, then, endorses a “pedagogy of engagement” that could include experiential learning, service learning, research or inquiry-based learning, and integrative learning as ways of involving students more frequently and deeply in the learning process. While these pedagogies have existed in higher education for some time, they have largely been available only to an elite group of students. Schneider and Shoenberg argue that a broader array of students must engage in these ways of learning.

More recently, the *Greater Expectations* report also lists a set of pedagogical strategies that contribute to intentional, powerful, liberal learning:

1. Research and inquiry-based learning
2. Analytical and reflective writing
3. Small group discussions
4. Service learning
5. Cooperative and collaborative learning
6. Solving “real world” problems by integrating knowledge from many subjects
7. “Authentic” and performance-based assessments
8. Use of portfolios and continuous self-evaluation
9. Self, peer, and teacher assessments with cycles of revision
10. Teaching by example
11. Teaching that addresses multiple learning styles (AAC&U 2002a, 33, 47).

Key Points

The various recommendations for new pedagogies can be summarized as four fundamental exigencies. The first is setting *high expectations* of students that are manifest through learning outcomes achieved cumulatively across the undergraduate curriculum. The faculty demands high-quality work from students at introductory levels, deeper work at intermediate levels, and even more sophisticated work at advanced levels. Jonathan Smith provides a simple test for depth: primary materials, seminar format, and engaging in “genuine areas of uncertainty and debate within the discipline” (Smith 1983, 14). Writing across the curriculum initiatives, and other similar movements, respond to the need for cumulative learning. Students best develop intellectual skills by applying them repeatedly at ever-higher levels of inquiry.

Second, the recommendations point to students being *active* in their education. Helping students acquire core proficiencies and inquiry capacities while engaged with important content provides a strong example of “both/and” thinking in practice.

Integration of intellectual work is the third factor. Connecting across cultures and disciplines; connecting general education with the major; connecting introductory, intermediate, and advanced courses; and connecting research with people’s lived experiences all constitute a capstone level of achievement of a liberally educated student, but they will not occur without significant efforts at integration throughout the curriculum. As one PAA participant noted:

...what does the integration of general and professional ability outcomes mean? It means teaching general and professional abilities in the same courses, in both the pre-professional and professional years, adopting the explicit goal of helping students to improve as problem-solvers, critical thinkers, ethical decision makers,

and communicators within the discipline taught in the course. It means moving beyond content (not *away* from content) toward a student-centered pedagogy that stresses active and lifelong learning (Zlatic 2000, 371).

Finally, *feedback*, given in a timely and helpful fashion to students, reinforces the power of high expectations, active learning, and integration.

4: Sustaining and Enhancing Learning:

Assessment

Assessment, the final facet of the PAA model, is the means by which all of curriculum and pedagogy is informed about student achievement of learning outcomes. Few developments in American higher education in the last 25 years have occasioned more conflict and misunderstanding than assessment, yet assessment is simply a tool for ongoing improvement of teaching and learning. It is something that all faculty, with various degrees of intentionality, practice.

The PAA group recognized that assessment is crucially important to both faculty and accreditors. They noted that assessment must be aligned with the primacy of learning, with the outcomes chosen and pursued, and with the basic concept of liberal education as collaboration between general education and the major.

What is the New Focus of Assessment?

The shortcomings of the assessment movement in its early years contributed to the formation of PAA. Assessment then was almost exclusively quantitative, focused on basic skills, and standardized. In many ways, the movement elevated to primary value what was easy to assess, resulting in a definition of learning as an accumulation of facts and basic skills that could be easily inventoried.

Both the *Greater Expectations* report and PAA have developed new operational concepts of assessment. They entail:

1. Situating the most important site of assessment in the senior year (just as, in a parallel process, PAA generated its liberal education outcomes by considering the graduating student)
2. Focusing assessment on the most sophisticated outcomes of the undergraduate degree and the steps faculty can devise to lead students to that point (a cumulative concept of assessment)

3. Integrating general education and major outcomes
4. Evaluating specific student performances, related to chosen outcomes, in meaningful ways
5. Educating students in self-assessment, so as they move from year to year, their judgments about their own performance will better align with faculty assessment.

The PAA Statement on Assessment

The PAA group developed criteria of good practice in assessing the baccalaureate degree (understood as an integration of general education and the major). The first five criteria are often taken for granted given the current conventional wisdom about assessment. The remaining six criteria constitute some modifications to that conventional wisdom. They apply to assessing the ability of seniors to integrate learning gained through general education and the major. They can serve to guide faculty decisions about curricular design and teaching methods so first-year students can reach the desired senior performance level.

Presumed from general assessment practice

1. Institutional mission guides the choice of the learning goals and objectives to be assessed.
2. The implementation of an institution's strategic plan accords high priority to assessment practice, which in turn determines the effectiveness with which the institution is achieving its goals and objectives.
3. The institution's constituencies (especially the faculty and administration, but also students, trustees, employers, and the general public) are active advocates of the assessment plan and the goals and objectives on which it is based. This advocacy is achieved through active discussion and promotion of the plan.
4. Assessment is continuous, systematic, multi-dimensional, and based on well-defined outcomes for student learning (e.g., Bloom's taxonomy).
5. There is an ongoing, systematic process for using assessment results to: improve teaching/learning, identify areas in need of improvement, and identify ways to accomplish this improvement.

Criteria specific to PAA

1. Assessments demonstrate successful integration of learning from both the major and the general education components of the degree program.
2. Formative and summative methods provide valuable contributions to the assessment of student learning.
3. Assessment examines learning outcomes that characterize advanced undergraduate study. Since mastery of these outcomes develops cumulatively, over time and throughout the entire educational program, assessment methods are consistent with this longitudinal view of student development.

4. Assessment activities arise from and reflect actual student learning experiences, both curricular and co-curricular.
5. Faculty members, whether they teach general education or major courses, assume collective responsibility for both parts of the curriculum. They create, implement, sustain, and rate assessments of student learning.
6. The curriculum includes courses and assignments in which (1) students not only develop knowledge and skills but also practice integration; (2) faculty members coach students to make connections between the major and general education; and (3) students engage in some culminating activity or product that demonstrates their ability to integrate their undergraduate experience.

Why Do Assessment?

The faculty and accreditors in PAA found agreement in the fundamental concept behind assessment: a commitment to excellence in and collegial improvement of teaching and learning. This commitment is not an add-on, but rather an essential and constitutive element in the professionalism of teachers. Accountability, in this schema, entails documentation of the use and the results of assessment.

Fulfilling this commitment calls for the whole faculty of an institution to assume responsibility for continuous improvement of teaching and learning. Assessment follows as the means for gathering the information to guide this quality enhancement. The commitment to quality enhancement, in its turn, applies to the practice of assessment itself, so that ongoing review of and improvements in assessment (“meta-assessment”) are desirable. Faculty agree to share assessment results with colleagues so as to extend quality enhancement to the programmatic level and to the entire baccalaureate degree. If the reason for assessment is to improve learning (rather than simply to ensure accountability), it follows, *a priori*, that there are no negative results from assessment.

The PAA group agreed that if an institution is serious about this learner-centered approach to assessment, it must establish supportive structures and policies and engage in a study of outcomes. Assessment must be:

- *Sustained*: Data gathering is systematic, regularly scheduled on a semester- by- semester basis, and fed into the existing committee structures.

- *Evidence-based*: Both qualitative and quantitative data are gathered, using a wide variety of methodologies appropriate to the diverse natures of various programs and outcomes.
- *Participatory*: Many different people have a stake and thus play a role in these assessments—faculty, students, administrators, and student affairs personnel.

Assessment can serve three purposes. The *primary purpose* is to provide prompt and helpful feedback to students on their performance in classes. This function is especially important to keep in mind, given the present situation in which “ongoing assessment of individual student learning with feedback to help students improve does not seem to be the focus of most institutions” (Doherty, Riordan, and Roth 2002, 4). Teachers need to give feedback to help students focus their learning energies and to show them both what they have mastered and what remains to be learned. Such feedback can fit into daily or weekly classroom work, in connection with assignments and in-class activities.

Other assessments can occur annually, when faculty responsible for a particular program meet to share their individual assessment results. This improvement of program quality is an important *secondary purpose* of assessment, and it clearly moves faculty beyond an individual to a collective understanding of better learning.

An important *third purpose* of assessment considers external stakeholders. Periodically, various institutional stakeholders need to know how well students are meeting the learning objectives set for them. Trustees, parents, and accreditors, as well as state and federal policymakers, have asked institutions to be accountable for student achievement. If, however, the first two purposes of assessment have been fulfilled—and *documented*—then the information for this external use of assessment can be derived from the findings. For example, an administrator can select the relevant data gathered to improve programs and aggregate them for accountability purposes. By being student- and learning-centered rather than stakeholder-centered; intrinsic to the teaching-learning relationship rather than externally imposed; and focused on excellence rather than on accountability, this approach is the inverse of what many people think of as assessment.

Recently, accreditors have moved in direction of assessment primarily for improvement. The Middle States Association calls for “continuous improvement” as the purpose of assessment. The WASC Accrediting Commission for Senior Colleges and Universities, in its new Standard 4, stresses how each accredited institution ought to strive to be an “organization committed to learning and improvement.” In place of some accreditors’ call for a “culture of assessment,” WASC envisions a “culture of evidence.” PAA embraced this concept and extended it even further, calling for a *culture of excellence*.

How to Assess

With a philosophy of assessment centered on student learning established, the next steps are to ask, “What and how are students learning?” and “How is it possible to ascertain what has been achieved?” The best kinds of evidence for answering such questions are comprehensive (covering the full range of outcomes posited), involve multiple sources of evidence, evaluate different facets of student performance, and present direct evidence of student achievement (Ewell 2001, 19-20). And if outcome achievement is deemed inadequate, administrators and faculty at all levels (institutional, departmental, classroom/course) can begin the process of reshaping curricula and pedagogy to meet the desired goals.

Just as the notion of “beginning with the end” was helpful in defining outcomes (Chapter 2), the group focused on senior-level performance as the primary site of cumulative assessments. Once faculty and administrators have articulated outcomes for graduating seniors of a particular program or institution, they can then design a project, assignment, or capstone experience that will allow students to demonstrate these outcomes, reached through cumulative learning in general education and in the major. The assessment can be quantitative and/or qualitative and involve faculty evaluators from a number of collaborating departments. Individual results can be communicated to the students and also aggregated for future program improvement. The appendix to this report includes a range of excellent examples of cumulative assessment, most designed for the senior year.

Of course, faculty and administrators should be intentional about students' preparation for such a capstone experience, as it ideally would be a sophisticated, integrated demonstration of outcomes. Once a campus "begins with the end," faculty can plan how to work with students so they progressively develop the capacities to be assessed, from the first to the senior year. At key points along the way, students could be expected to complete well-designed projects¹⁷ that encompass many of the outcomes desired. Formative assessment, shared with students at these points, would encourage better learning. The PAA specific criterion #6 (page 39) is a helpful summary statement of the relationship between a capstone and its preparation.

As, over time, accreditors gained more experience with assessment and reflected critically on its important elements, they produced valuable guidelines. WASC issued an "Evidence Guide" that communicates clear and useful information about what counts as convincing documentation of student academic achievement. The Middle States publication *Student Learning Assessment: Options and Resources* furnishes practical advice on assessment for both the novice and the more experienced professional.

How to Use the Results of Assessment

If campuses accept the premise that with assessment for improvement there are no negative results, then they can profitably use the results obtained. If faculty and administrators find students to inadequately achieve the outcomes, they can feed this information back into a process to improve the effectiveness of curricular structures or pedagogical methods; occasionally, the data will trigger a review of the outcomes themselves. The PAA model for twenty-first century liberal education reinforces the interrelationships of the model's components—Mission, Outcomes, Curriculum, Pedagogy, and Assessment; assessment relates to all of the other components.

Assessment inevitably returns to outcomes. Well-designed and -performed assessments will show where outcomes need to be clarified and even refined. They will suggest where curriculum could be modified, and faculty will first often look to changing curricular structures. Assessment can also reveal a need to examine teaching practices; sometimes introducing new pedagogical methods even within an unchanged curricular structure can

significantly improve student learning. Assessment methods themselves, too, can be revised as faculty learn how to improve them. Outcomes, curriculum, pedagogy, and assessment are interrelated, so that a change anywhere in that cycle typically eventuates change elsewhere. Mission, alone, is generally left out of this cyclical clarification and enhancement, because the fundamental mission of an institution would change with much less frequency.

In addition to fine-tuning outcomes, revising pedagogy and curriculum, and refining the assessment methods themselves, assessment results serve another crucial purpose: helping an institution enhance, through increased collaboration among faculty members, the integration of general education and the major.

COMMENTARY

Why Assess?

There can be only one reason for the existence of formal assessment procedures at a college or university: to enhance student learning and development.

Campuses accredited by the Southern Association are asked to “say what they do and do what they say.” Thus “institutional effectiveness” starts with a mission statement, which, at its best, reveals the set of values at the institution’s core. The statement is supported by an appropriate plan for meeting the mission and a continuously functioning planning and assessment process. The next steps apply to all educational programs and support services:

1. establish a clearly defined purpose appropriate to collegiate education;
2. formulate goals and objectives consistent with that purpose;
3. develop and implement assessment procedures to evaluate the extent to which the goals are being achieved in each program and unit; and
4. use the results of assessment to improve programs, services, and operations.

This final and most important step is widely known within the Southern Association as “closing the loop.” It means that the process of assessment has enhanced the quality of the institution.

JOHN DWYER – Associate Executive Director, Commission on Colleges,
Southern Association of Colleges and Schools

COMMENTARY

Formative and Summative Assessment of Student Learning

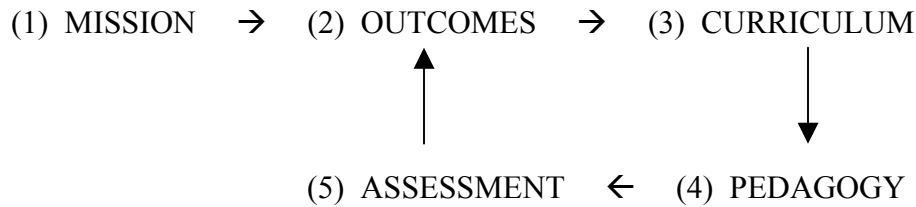
Assessing performance or achievement *along* students' careers (formative), as well as at the *end* of their careers (summative), provides faculty with valuable information about which students learn, what they learn, how they learn, and when they learn. Tracking cohorts of students over time helps faculty interpret student performance within the context of the educational experiences that led to that performance—pedagogy, curricular design, opportunities to transfer and apply concepts and principles, and related educational opportunities that faculty believe foster learning.

If certain students are unable to demonstrate progress toward desired outcomes, with formative assessment faculty have the opportunity to review pedagogy, course content, course sequencing, and students' course-taking patterns to understand why these students are less able than others to show progress. Faculty might then explore the following kinds of questions: How have students learned in their previous coursework? Does their history of learning include ample opportunity to practice the kind of learning we value? How do our courses build on each other to contribute to desired learning? What pedagogies contribute to desired learning? Which students benefit from these pedagogies? How well are curricula and pedagogies matched with the outcomes? Do students' course-taking patterns help or hinder their levels of achievement?

PEGGY MAKI – Senior Scholar, Assessing for Learning, American Association for
Higher Education

5: The Learning Institution

For PAA, a “learning institution” puts student learning at the center of its functioning and values outcomes over inputs. It also continuously learns how to improve its own teaching and learning practices. Such an institution understands the interrelationships of:



If attaining an undergraduate education can be compared to a journey, then Mission and Outcomes set the destination. PAA illustrated how an institution can agree on outcomes, listing them as core competencies, inquiry capabilities, and abilities to apply knowledge to a range of questions.

The Curriculum and Pedagogy are the pathways to reach the destination. The curriculum’s design includes general education, the major, and the interconnectedness of the two. It is precisely the interaction of general education with the major—as well as faculty collaboration necessary to achieve such interaction—that renders this model of liberal education powerful for achieving the desired outcomes. Pedagogical methods are selected as appropriate to the outcomes and to students’ learning styles.

Assessment can be understood as an ongoing process of “course correction” on the journey. Providing students with feedback on their performance guides their next steps along a developmental path. Colleagues who share assessment results can improve collective responsibility for student achievement of the desired outcomes. Assessment contributes to students’ integration of general education and the major and is also the best guarantee of cumulative learning. This entire process constitutes the “culture of excellence” envisioned by the PAA group.

For sophisticated, outcomes-based learning to be enacted and sustained on campuses, practices at colleges and universities and within accrediting agencies will need to change; collaboration between campus constituencies and accreditors will need to improve. Below is a list of recommendations for achieving this culture of excellence:

General

- Higher education would stress a practical education for all students.
- As citizenship, lifelong learning, diversity, and global awareness are increasingly valued, general education would be a high priority for all faculty.¹⁸
- Local definitions of the “educated graduate” would be detailed in a list of outcomes.
- There would be ongoing collaboration, year-by-year, between general education and the major.
- Links between general education and the major would be found in mission statements.
- Departments would reinforce core competencies in lower- and upper-level major courses to build integrative capacities in students.
- Faculty would design assignments that connect with other disciplines and with general education.
- Interdisciplinary courses and collaborative projects across departments would proliferate.
- Faculty would develop a strong sense of collegial responsibility for the entire range of student learning outcomes.
- Accreditors would place more emphasis on “quality enhancement,” to use the Southern Association’s phrasing, than on compliance with basic standards.

Personnel

- There would be a top-level administrator in charge of general education and its connection with the majors.
- A broader notion of “faculty” would be embraced, including librarians, student affairs professionals, and other staff members responsible for helping students achieve learning outcomes.

Assessment

- Assessment would be practiced for the sake of leading students toward an institution's high expectations for its graduates.
- As striving for excellence replaces minimum standards, accreditors would require institutions to submit detailed and feasible plans for continuously improving teaching and learning.
- Assessment would be used both to bring students up to the highest possible level and to inform faculty about what they need to revise in their pedagogy or curriculum to enhance student performance.
- Required assessments would be campus-wide rather than departmental.
- Assessments would manifest diverse methods for diverse outcomes, capture qualitative as well as quantitative results, and be used by the faculty to enhance teaching and learning.

Collaboration

- Regional accreditors would work with institutions to add value and assure and advance learning by focusing on a process of continuous quality improvement.
- To honor both public interest in accountability and accreditors' new focus on intentional practice, accreditation would hold institutions to externally and internally formulated standards of performance.

Clearly, implementing and balancing these recommendations will require attention and time. The accreditors, faculty members, and association officers that contributed to the PAA group focused their endeavors rather strictly on developing an adaptable process model for a sophisticated baccalaureate education attendant to the complexities of the twenty-first century. However, while focus leads to successful completion of tasks, it also necessarily ignores some larger issues. Some of these have been addressed by other projects in the Greater Expectations family of activities (e.g., general education as related to student transfer).

The work of the Project on Accreditation and Assessment results from an unprecedented collaboration among faculty, educational leaders, regional accreditors and specialized

accreditors; the level of consensus achieved by such a diverse group reflects the gathering momentum for better student achievement captured in the *Greater Expectations* report. Many colleges and universities have already used the process model proposed herein since its release in the *Greater Expectations News from AAC&U Initiatives #3* (AAC&U, 2002b). Application of this model on individual campuses, and its expected modifications based on local conditions, will be interesting to follow as the movement for more learning-centered undergraduate education expands.

COMMENTARY

Next Steps

There is little doubt that community college educators will join their colleagues at baccalaureate institutions in embracing the challenges outlined by the PAA members for increased collaboration between general education and the major. The objectives listed in this publication to encourage such collaboration, as well as to clearly articulate the mission, outcomes, curriculum, pedagogy, and assessment of liberal education, are labors deserving of considerable resources at each and every institution. However, because PAA focused its work on *undergraduate, baccalaureate degree* programs, readers of this document would do well to remember that relatively few graduates of four-year colleges start and end their collegiate experience at the same institution. The latest data reveal that 45% of first-time undergraduates attend public two-year colleges and that 22% of these eventually transfer to four-year institutions (reference).

In order to advance the goals so wonderfully articulated by PAA, the collaboration called for by its authors must start from a premise of embracing the differences within higher education and proceed with renewed efforts to forge educational partnerships. By this I mean partnerships that extend beyond the walls of individual institutions. In particular, baccalaureate colleges will serve the goals of liberal education well when both they and two-year colleges redouble efforts at inter-institutional collaboration and articulation.

JOHN A. DOWNEY – Director of Academic Services,
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Appendix

Models of Good Practice in Assessment

Though all five facets of the PAA process model are equally important, assessment still plays the role of an “acid test” in accreditation circles. As such, this appendix provides examples of campuses that are conducting assessment so that (1) general education outcomes and major outcomes are assessed together, and (2) general education and major outcomes can be assessed at the highest levels of undergraduate education (largely in the senior year).

The PAA group looked at institutions or programs that measured up well on the eleven criteria of “good practice” covered in Chapter 4. Using the contacts of regional and specialized accreditors, a total of 34 programs were reviewed for inclusion in this appendix. To make them as comparable as possible, each institution or program was asked to respond to the same five points:

- Give a brief description of the senior assessment.
- What are the general education outcomes and field-specific outcomes that are required to be integrated by the student in performing this assessment activity?
- How are students, in explicit and cumulative ways, prepared for this senior assessment in prior semesters?
- How is this senior assessment a learning experience for students?
- What is the breadth of faculty collaboration in the assessment activity?

At the final project meeting, PAA selected the twelve programs that exemplified the PAA criteria in Chapter 4. Of the twelve, the first seven occur in specialized professional programs, the next three illustrate general education or all-college capstones that include the major, and the final two represent culminating experiences in certain majors that include institutional general education outcomes.

The examples come from a mix of small, medium, and large institutions. Each model write-up includes a description of the (mostly) senior assessment experience, information on how major and general education outcomes are integrated into that experience, information as to how students are prepared earlier in their college years for the experience, and program contact information.

Portfolio Assessment
Teacher Education at Alverno College

Candidates for student teaching at Alverno College engage in a portfolio assessment experience the semester before they complete their student teaching. This is a culminating experience, one toward which they have been working since the beginning of the program. The purposes of the portfolio assessment are to give candidates an opportunity to demonstrate their readiness for student teaching by showing how they plan, teach, assess, and give feedback—and how they assess their own teaching. Both Alverno faculty and an educator from the P-12 sector give feedback on the portfolio. There are eight general areas of ability that the Alverno faculty identified as essential attributes to be attained by every student who graduates from the institution. For education majors, these eight attributes are clustered and aligned with the five abilities required of professional teachers:

<u>Education “Abilities”</u>	<u>College’s “Attributes”</u>
Diagnosis	Analysis Problem Solving
Coordination	Analysis Problem Solving Effective Citizenship
Communication	Communication Social Interaction
Conceptualization	Analysis Valuing Developing a Global Perspective
Integrative Interaction	Social Interaction Valuing

Students regularly work on lesson plan development and self-assessment according to the frameworks used in the portfolios, so that they prepare for the portfolio assessment in every class they take. New learning also occurs in doing the portfolio in two ways. First, students write reflections on what each lesson shows about them as developing teachers. They also write a detailed analysis of a videotaped lesson in terms of the double list of abilities above. Second, a professional in their field publicly critiques the portfolio. In these ways, students advance from just reflecting on their own performance to a deeper understanding of effective teaching.

Portfolio assessment involves all members of the education department, members of the departments that prepare secondary teachers, and professionals from local P-12 systems.

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Senior Assignment in Business
Southern Illinois University Edwardsville (SIUE)

The core of SIUE’s assessment program rests with the Senior Assignment (SRA). The SRA is defined as a scholarly engagement between student and professor that results in a product. Because the product is visible, it, and the curriculum that produced it, can be assessed. Students are observed while doing the SRA and examined on or asked to defend the product. The SRA is a culminating experience that provides a concrete experience of integration for students and an authentic indication of student learning to the faculty.

The SIUE School of Business identified four sets of attributes that their graduates should possess, with each set containing five further specifications of the general attribute. Each of the graduating seniors should:

1. demonstrate skills acquisition
2. demonstrate liberal knowledge
3. possess business goals
4. possess business skills.

Elsewhere, outcome 2 might be considered to be outside of business—an outcome for which general education faculty “out there” are responsible. At SIUE, in contrast, Business School professors are responsible for all of the outcomes listed above and are involved in teaching formal general education classes.

Two kinds of student activities occur in the Business SRAs. The first is an assignment to write a memorandum to a department manager in a simulated corporation. The student must review all aspects of a complex business case—markets (domestic and international), legal aspects (court decisions, tax law), accounting and financial contexts, technology, labor relations, and so forth—a genuinely cross-functional analysis. The memorandum is expected to make recommendations in the area of the student’s specialization, after demonstrating a grasp of the total situation. Students then give an oral presentation and defense of the memorandum, and several faculty raters judge the student’s mastery of oral and written communication, application of appropriate knowledge, analytical and critical reasoning, and persuasiveness or effectiveness.

The second is participation in an annual International Business Policy Competition that calls for multidisciplinary student teams to develop an analysis and a set of recommendations in response to simulated quarterly reports. As in the previous case, this simulation asks students to undertake roles and duties similar to what they will encounter after graduation. SIUE faculty use the results of the each set of SRAs to improve its quality in ensuing years. For example, recent assessments have led to a plan to include a more explicit ethical dimension to the memorandum exercise.

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Interactive Qualifying Project **Worcester Polytechnic Institute (WPI)**

WPI takes very seriously its responsibility to prepare its graduates to be problem solvers in an interdisciplinary and international context. In 1970, the institution adopted a project-based structure for its undergraduate programs, which consist mainly of engineering, science, and management areas. The first project, called the Sufficiency, is an independent study in some area of arts and humanities that rounds out and integrates the liberal arts dimension of the degree. The second, called the Major Qualifying Project, constitutes a senior capstone experience in the student's major.

The third, called the Interactive Qualifying Project, is a model of good practice in integrating general education and the major. A team of students completes this project, and it focuses on a complex technological problem as well as on the human and social context in which the problem and any potential solution exist. Students usually do this project, which is worth three courses in the junior year. Its aim is to develop in students the ability to frame, study, and solve problems in ways that are technologically sound but also appropriate to the human, social, economic, and environmental context. Teamwork, communication skills, and integrative thinking figure significantly in these endeavors.

In addition to these project requirements, there is a strong international dimension to the degree as well. WPI has fourteen Project Centers in places such as London, Venice, Bangkok, Zimbabwe, and Australia. Students who do their Interactive Qualifying Project overseas must also add intercultural sensitivity to the list of competencies to be demonstrated.

WPI also recently established the Worcester Community Project Center to bring students living on campus the experience of an off-campus learning environment. Within their project parameters, student teams work with community groups to gain experience in how local governments operate, and the sponsoring agencies receive a useful product from the team's analysis of the agency's issue.

There is a well-organized process for evaluating student performance in the Interactive Qualifying Project. Teams of faculty are recruited in the summer for paid positions where they read the reports from the student teams and rate them on a Likert scale for each of the ABET criteria (a mixture of engineering and liberal arts outcomes). The ratings on the eleven ABET criteria and narrative evaluations of the reports are then entered into a database that faculty can consult in order to improve the quality of any further projects they sponsor. Administrators use the database to design faculty development workshops related to these projects.

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Senior Integrated Design Project
College of Engineering, University of Hartford

The College of Engineering at the University of Hartford has been engaged in deliberate efforts to integrate humanities, sciences, and social sciences into the engineering curriculum. The new senior capstone is the fifth in a series of “Integrated Learning Blocks” that begin in the freshman year. This capstone gives students the opportunity to show that they have mastered the process of solving engineering problems, while at the same time taking into account the larger human, social, political, economic, and environmental contexts.

The capstone focus is an engineering problem that is studied by a team of seniors under the direction of Hartford faculty and one or the other industry partners. The final product could be a new product or process or a new experiment or methodology that would be implemented in industry. The results are shown in the form of a written report that summarizes the student team’s analysis of the problem and the design solution that it proposes. The team makes an oral presentation of its report to an audience of student peers, university faculty, and representatives from business and industry. The oral and written reports must contain sections that address the social, political, economic, and cultural dimensions of the problem and its proposed solution.

Students are prepared for this senior project by Integrative Learning Blocks in the previous three years of the engineering curriculum. The Freshman Block calls for collaboration between engineering and humanities faculty on the development of skills in communication, research, data evaluation, and problem analysis in small groups. In the sophomore year the focus is on problem solving skills and discussion of ethical issues and their social context between engineering and non-engineering students. Junior year engineering courses are linked to Western Heritage courses in the all-university curriculum. Collaborative learning and team-building experiences are key parts of these preparatory learning blocks.

Faculty assessment of the senior capstones is done on the basis of work carried out to satisfy the objectives and goals. The presentation part is focused on the written report and its oral presentation, as well as on observation of the process used by the student team to produce the report. Students have had feedback from faculty in previous years on the development of skills needed to succeed in the capstone. The assessment of the team's work by business and industry clients raises the level of seriousness of this capstone project in students’ minds. Engineering faculty put the results of the capstone assessments to good use in revising the structure and the teaching of the earlier Integrated Learning Blocks.

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Synthesis for Professional Nursing Practice **DePaul University**

At DePaul University all students are required to complete a capstone course to fulfill a liberal studies general education requirement. The capstone course is designed to integrate humanities and science perspectives within the major discipline. For nursing students this course is “Synthesis for Professional Nursing Practice,” a liberal studies course taught by nursing faculty. Although the main assignment in this course deals with a nursing topic, student performance is assessed in relationship to the ten University Learning Goals for graduates: mastery of content, communication, independence and cooperation in professional practice, multicultural perspectives, religious and ethical foundations, critical and creative thinking, multiple literacies, arts and literature aesthetic, self-reflection and lifelong learning, and historical consciousness. In that way, this seminar course serves as a culmination of the student’s prior courses and includes further development in the professionalization process.

One-half of the grade in the synthesis course derives from the written and oral presentations of a student’s handling of a controversial issue in professional nursing practice. In keeping with the breadth of the ten learning goals, there are clear and explicit expectations that the student presentations will include an historical perspective, an aesthetic dimension, and spiritual or cultural influences. Discussion of topics related to evidence-based practice, health policy development, ethical decision-making, use of technology, and cost containment practices in managed care are some of the specific ways that university goals in the humanities and social sciences show up in these projects. Communication skills and critical thinking skills are assessed whether students are presenting or in the audience.

As was stated in a recent syllabus for this synthesis course, “After participating in this course the student will be able to synthesize information on a specific controversial topic, including a historical perspective, ethical and legal issues, aesthetic and spiritual perspectives.”

The nursing department developed specific assessment criteria for each of the ten learning goals, as a student of nursing would be expected to exhibit them. Assessment rubrics for these criteria are used to assess performance formally at entry into the program and at graduation, as well as throughout student coursework to give criterion-referenced feedback. The assessment process includes student self-assessment using the rubrics prior to faculty assessment using the same rubrics. The synthesis project thus serves both as the formal graduation assessment used to measure capstone student performance, including integration of nursing outcomes with university general education outcomes, and as the primary source of data for program evaluation.

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Nursing Portfolio
Madonna University

Student nurses at Madonna University develop and maintain an educational portfolio during the four semesters of nursing courses. In the Senior Seminar in the final semester, they compose a prologue to the portfolio. In this prologue the student makes explicit connections between the goals of general education at Madonna and the Department of Nursing program outcomes. The student also includes in the prologue a summary of the areas of most significant growth throughout his or her whole baccalaureate experience.

Completion of the fourth term marks the final assessment of the student's progress toward achieving general education goals and nursing program outcomes. The final state of the portfolio is highly organized. Students write individual essays that explicitly address the integration of relevant University general educational goals with the nursing program outcomes. Thus, nursing program outcomes, general education outcomes, and personal goals are woven together in the student's final semester—but as a reflection on what has happened all through the previous semesters. The integration of the undergraduate experience begins when the student begins to put together the portfolio.

To help to visualize how these portfolio components fit together, an example may be appropriate. Communication is one of the nursing program outcomes. The student begins with general education courses in English composition to improve the ability to write effectively. Later on, a course in “foreign” culture enlightens students on ways of thinking and practicing in other cultures and facilitates the development of cultural sensitivity in communication. In the nursing program, there are courses that address therapeutic communication and communication in family and community situations that provide insights into verbal and non-verbal forms of communication. Therefore, specific communication abilities required for nursing professionals are developed by expanding and further reinforcing the communication skills that were begun in general education courses. To help the student make the link between program outcomes and general education goals, the Senior Seminar syllabus links each program outcome with the appropriate general education goal, the seminar course outcomes, and the course outcome indicators.

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Senior Assessment
Alverno College Division of Nursing

As a general principle, all assessments of outcomes at Alverno deal with both disciplinary knowledge (the major), as well as the eight abilities to be acquired by all graduates from the College (general education). These eight abilities are: communication, analysis, problem-solving, valuing in decision-making, social interaction, developing a global perspective, effective citizenship, and aesthetic responsiveness. The advanced outcomes for student nurses at Alverno, which incorporate the preceding eight abilities, are:

- Uses the nursing process within an analytic framework in meeting health needs of individuals, families, and groups.
- Formulates value judgments reflecting a respect for the dignity and individuality of every person.
- Interacts in an effective goal-directed manner.
- Collaborates as a member of the health team to facilitate the adaptive process.
- Uses adaptation theory in analyzing environmental influences.
- Accepts a commitment to fulfill the responsibilities of a professional practitioner in contemporary society.

Typical of the kind of performance assessments embedded throughout their years of study are two senior-level assessments created by the Nursing Division that require integration of these outcomes in a manner especially appropriate to a nursing graduate. The first is an “In Basket” simulation in which a senior nursing student takes on the role of a public health nurse, preparing to go on vacation, who then gets a call dealing with possible child abuse. The student must immediately generate questions to ask during the site visit and possible interventions to be ready to implement. In addition to that call, she must prioritize and develop care plans for a caseload of families and assign the right personnel to manage the caseload while she is on vacation. The student nurse’s performance is judged by faculty, by professionals from the community, and by the student herself (according to previously published criteria).

The second assessment assigns the task of designing a campus health fair (to be actually conducted on campus) to a group of student nurses. One of the important parts of the design is the development of the criteria that the students will use to judge the degree of success of the health fair. As above, many people provide feedback to students on their performance and, more importantly, on their self-assessments.

These particular senior-level assessments are also learning experiences for students, because they simulate real professional situations and demand “on-your-feet” synthesis of abilities and knowledge. In both their formal self-assessments and feedback, students testify to how much these assessments tell them about their readiness to graduate and enter the ranks of professional nurses.

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Senior Seminar **Saint Joseph's College (IN)**

Saint Joseph's College has had an interdisciplinary core curriculum since 1969; all students take the same ten team-taught general education courses (a total of 45 semester hours) throughout an eight-semester period. The final core segment in the second semester of the senior year is a three-credit seminar that engages students, individually or in small groups, in confronting some serious contemporary issue that forces them to integrate what they have learned through their majors with what they have learned in the general education core.

There are four primary points on which student work is assessed. Students must: (1) study a seminar topic from at least two disciplinary perspectives, (2) include the ethical dimension of the topic in their work, (3) demonstrate the ability to do the kind of research appropriate to their topic, and (4) present the results in oral and written forms representative of senior-level work.

Since these senior seminar presentations constitute both a bridge between general education and the major and also a performance that recapitulates a student's entire undergraduate experience, a great deal of attention is focused here in the institution's assessment plan. This is where the college judges its "product." The seminar professor makes the grading and assessment judgment for each of his or her students and also coaches students in making detailed self-assessments of their work. But at least half of the seminar presentations are also judged by a team of four or five "outside" raters: retired professors, administrative staff, and professionals from the local community. (There are rubrics created by the core faculty to help coordinate the outside ratings with the faculty ratings.) How well students are prepared to do this capstone work is important and useful information about the quality of the college's programs, core and the major, that the student has experienced up to this point. The core curriculum committee analyzes the results of each year's assessments of the senior seminar to determine if and where changes need to be made in the freshman, sophomore, and junior years.

Although the senior seminar requires more thorough research and a more professional presentation than any previous work in core, there is ample opportunity for students to learn and to rehearse these skills at the lower levels. In the six-credit segment of core that students take each semester, they constantly see faculty modeling interdisciplinary ways of studying topics and attending to the value dimensions of issues. In core discussion groups, students then are required to talk and write about the texts and issues in an integrative manner. Since Saint Joseph's is a small institution, the faculty for core are the same faculty who teach in the majors, so the common core and the majors tend to become synchronized very quickly.

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Senior Capstone **Portland State University**

The general education program that Portland State adopted in 1994 requires a six-credit senior capstone of every student. This capstone has four main objectives:

- to provide an opportunity for students to apply the expertise learned in the major to address real community issues
- to give students experience working in a team context necessitating collaboration with persons from different fields of specialization
- to encourage students to become actively engaged in addressing community issues
- to empower students to create summation products that represent their learning and meet the needs of community partners.

The “expertise” from the major mentioned above obviously varies from student to student, depending on the major. All students, however, are to exhibit competence in the four general education goals of the institution: communication, appreciation of diversity, critical thinking, and appreciation of social responsibility. Earlier components of the general education program are designed to prepare students to perform as desired in the capstones. The freshman year focuses on inquiry skills in various disciplines; communication, both individual and in groups, is stressed in the second year; and then upper level cluster courses enable students to apply inquiry and communication skills in a more sustained manner to a theme of their own choosing. Finally, students are provided with orientation and training materials within the capstone itself.

Each capstone engages a multidisciplinary team of students, under the supervision of a faculty member and a community partner, in developing solutions to real community issues. Students have to work collaboratively with one another and with people from the community. Some 140 of these capstones are offered each year, 35 in each of the four quarters, so students have real possibilities of finding a topic that fits both their interests and their academic background.

Through observations by faculty and community leaders, study of reflective journals by the students, and open-ended surveys and interviews, assessment results show that students claim and exhibit important learning in teamwork skills, in how to apply their learning to real life problems, and in social responsibility. Integration of the student’s entire undergraduate experience, in applying their learning to solve a real community problem, is the clear theme that emerges from student reflections on the capstone experience. The Capstone Office reports these data to the faculty, to guide course revisions, and the office uses them to plan the faculty development activities needed to improve the program.

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Honors Capstone **Hampton University**

The Honors Capstone at Hampton University is designed to provide an opportunity for students to synthesize their undergraduate experience. In the Capstone Seminar, students discuss research methodology while doing an in-depth study of some topic of interest. Two products are required—a report on the results of the study and an Honors Portfolio.

For the independent study the student must select a topic that is not directly related to his or her major. Because this work will be done independently, each student prepares a work schedule and time for presentation, subject to the professor's approval. The student is required to make an oral presentation of the project using appropriate technology to enhance the presentation.

The Honors Portfolio consists of a minimum of three and a maximum of six pieces of work that span the student's period of study at Hampton. Among these pieces must be at least one piece of writing that involves research. The work in the portfolio need not be all written work. It may include video or audiotapes, art works, computer programs, or any other work that the student can successfully relate to course objectives. There must be a written prologue to the portfolio that explains why each piece is included.

In order to graduate with Honors College endorsement, a student must demonstrate the following:

- The ability to present ideas and communicate effectively in writing
- The ability to speak effectively
- The ability to analyze and synthesize a broad range of material
- The ability to apply research methods to a chosen topic
- The ability to reflect on experiences

The capstone research project and the Honors Portfolio are evaluated with these five criteria in mind. Each student chooses a committee of three people, two members of the faculty and one peer, to evaluate both the independent study product and the Honors Portfolio. This committee reviews and critiques these products and also the public oral presentation and defense of them.

The Capstone Seminar is designed as a community of learners that discusses, makes suggestions, provides feedback, and supports its members so there is a fruitful combination of individual and group dimensions to the work of the class. On the one hand, students have to take responsibility for individual research but, on the other hand, they do so with the support of a community. Furthermore, since the topic for the project is outside the student's academic major, each student selects a mentor who has expertise in the field of that topic and receives guidance from that mentor, thus widening the range of faculty contributions to the Honors Capstone.

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Comprehensive Mathematics Project **Saint Mary's College (Indiana)**

Assessment for seniors in mathematics at Saint Mary's is done primarily through the Senior Comprehensive Project. Each student undertakes a semester-long independent study project under the direction of a faculty advisor. Two hour-long preliminary reports are given to the entire seminar group of seniors (seven or eight) doing this project, and everyone in attendance completes a comment form after the talk. The instructor reviews these forms and returns them to the student with additional comments. The student writes a final paper (usually 25-30 pages) that is read by three faculty members and makes a public oral presentation with questioning by a faculty panel. Students are expected to be able to answer questions about any mathematics they have studied that is relevant to the topic of their independent study. In this way, the mathematics faculty intends to make explicit focus on synthesis and independent learning the major emphasis of the senior year.

In addition to knowledge and abilities in the area of mathematics, the general education outcomes that are most directly involved in this senior project are those dealing with oral and written communication, clear thinking about complex problems, and the ability to learn independently. Lower level mathematics courses reinforce the development of these abilities by including writing assignments in every course, and by giving feedback to students on the precision and style of their writing. Oral presentations are also included. Upper level mathematics courses require the foundations developed in the first two years. Synthesis of the material—connecting the pieces presented in class and recognizing the big picture, including relationships to other parts of the undergraduate experience—is accomplished by individuals and also by the group. As students write papers dealing with a sequence of technical issues, they are expected to provide connections between ideas. And as students progress through the major, they are expected to work more and more independently.

The entire mathematics department is involved in these projects. Every student has an advisor, and a team of three faculty members reads the final paper and then asks questions during the oral presentation. The instructor for the senior seminar group sits on each review panel, and every faculty member in the department serves on at least two of these panels each year. At the end of the presentation, the seminar instructor conveys to the student via letter the judgment of her performance. When all the projects for a particular year have been concluded, the department faculty meet as a whole to assess the experience and propose any needed changes.

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Independent Research in Biology **King's College**

The Senior Integrated Assessment in Biological Research at King's College differs from a typical laboratory course in that there is no designated topic or laboratory project. Students must decide on an appropriate topic based on their previous learning. There is likewise no pre-designed protocol for carrying out the project, so students must design their own. Of perhaps greatest significance in this approach is that students must therefore continuously resolve problems as they emerge in the course of doing the project.

An appropriate topic is one for which testable hypotheses can be generated. With guidance from a faculty member, the student then devises and conducts original and independent research that may provide results relevant to these hypotheses. These results are communicated in both written and oral form, with the expectation that these communications conform to the conventions of invited presentations at major conferences in the field of biology.

The general education program at King's College aims to develop seven skills in each student, skills that are conceived as transferable to any major field: critical thinking and problem solving, effective writing, technology competency, effective oral communication, quantitative reasoning, library and information literacy, and moral reasoning. As students progress from semester to semester through their undergraduate experience, these skills are reinforced and developed in both general education and major courses. Thus, the student who begins the culminating research project in biology has been rehearsing the skills required to complete it successfully all through his or her course of studies.

Two other assessment exercises help prepare students for the challenges of the independent research project. Biology majors maintain a portfolio of their work in the major, and they are given frequent feedback on the contents of their portfolios by faculty advisors. There is also a sophomore or junior level "Diagnostic Project" that requires an oral and written report on a smaller scale than that of the senior independent research, but emphasizes the same transferable skills.

In the particular case of the senior research project in biology, students are provided with a detailed list of the criteria by which their work will be judged. This list covers the oral report, the written report, critical thinking, use of the library and information technology, and the various components of quality research in the field of biology.

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Endnotes

¹ For brevity, these campus-based members are designated as “faculty” throughout the project report.

² The report was released in September 2002. To view or download and print the report, visit www.greaterexpectations.org.

³ The language of quality now permeates many of the accrediting guidelines. For more on quality issues in higher education, see Astin (1993a), Bogue and Saunders (1992), and Mayhew, Ford, and Hubbard (1990).

⁴ Although not strictly mandatory, regional accreditation is required as a condition for federal funding eligibility (including student loans and grants).

⁵ CHEA represents the interests of higher education to the federal government, recognizes accrediting organizations, and provides a national forum for the exchange of ideas and the development of policy recommendations.

⁶ In lieu of specific page references to accreditation documents, please refer to the list of Web sites at the end of this project report. A significant amount of material produced by accreditors is available on-line.

⁷ According to the *Greater Expectations* report, “responsibility for a coherent curriculum rests on the shoulders of all faculty members working cooperatively,” 31.

⁸ For example, the North Central Association defines an educated person to be “one capable of independent, critical thinking about the broader social, economic, cultural, and political environments in which all of us build our individual and corporate lives” (Crow 1997, 491).

⁹ For example, the booklet states that nurses must “recognize that clinical judgments have as much to do with values and ethics as they do with science and technology.”

¹⁰ *Greater Expectations* notes, “the goals of liberal education are so challenging that all the years of college and the entire curriculum are needed to accomplish them,” 31.

¹¹ As outlined in *Greater Expectations* report, such an intentional learner would be “empowered,” “informed,” and “responsible,” 4-9.

¹² For more on pedagogy that fosters outcomes such as those described here, see citations throughout Chapter 3, including Schneider and Shoenberg (1998) and Gaff, Ratcliff, and Associates (1996).

¹³ For further discussion, see *Greater Expectations*.

¹⁴ See, for example, AAC&U (1988, 1990), Astin (1993b), Gaff (1999), Gaff, Ratcliff, and Associates (1996).

¹⁵ Drucker (1994).

¹⁶ This list is a summary of points made by Jones and Ewell (1993).

¹⁷ For more on these “authentic assignments,” see *Greater Expectations*, 40.

¹⁸ Illustrative of this, UCLA and Stanford have adopted the policy of not accepting high school AP credits in substitution for their general education courses (see Penn State 2002, 27).

References and Suggestions for Further Reading

Accreditation Board for Engineering and Technology. 1998. *Engineering criteria 2000*. 3rd ed. Baltimore, MD: Publisher.

American Association of Colleges of Nursing. 1998. *The essentials of baccalaureate education for professional nursing practice*. Washington, DC: Publisher.

American Academy for Liberal Education. n.d. *A new model for accreditation in the liberal arts*. Washington, DC: Publisher.

Association to Advance Collegiate Schools of Business. 2001. *Working draft of business accreditation standards*. St. Louis, MO: Publisher.

Association of American Colleges and Universities. 1988. *A new vitality in general education*. Washington, DC: Association of American Colleges and Universities.

-
- . 1990. *Integrity in the college curriculum: A report to the academic community*. 2nd ed. Washington, DC: Association of American Colleges and Universities.
- . 1991. *The challenge of connecting learning*. Vol. 2 of *Liberal learning and the arts and sciences major*. Washington, DC: Association of American Colleges and Universities.
- . 1994. *Strong foundations: Twelve principles for effective general education programs*. Washington, DC: Association of American Colleges and Universities.
- . 2002a. *Greater expectations: A new vision for learning as a nation goes to college*. Washington, DC: Association of American Colleges and Universities.
- . 2002b. *News from AAC&U initiatives #3*. Washington, DC: Association of American Colleges and Universities. (January).
- Astin, Alexander S. 1993a. *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. Phoenix, AZ: Oryx Press.
- . 1993b. *What matters in college?* San Francisco: Jossey-Bass.
- Bogue, E. Grady, and Robert L. Saunders. 1992. *The evidence for quality: Strengthening the tests of academic and administrative effectiveness*. San Francisco: Jossey-Bass.
- Boyer Ernest L., and Arthur Levine. 1981. *A quest for common learning*. Washington, DC: Carnegie Foundation for the Advancement of Teaching.
- Commission on Collegiate Nursing Education. 2000. *Standards*. Washington, DC: Publisher.
- Crow, Steven. 1997. "Measuring moving targets: An unfinished theme." *North Central Association Quarterly* 71 (Spring): 489-91.
- Doherty, Austin, Tim Riordan, and James Roth. 2002. *Student learning: A central focus for institutions of higher education*. Milwaukee: Alverno College Institute.
- Drucker, Peter F. 1994. "The age of social transformation." *The Atlantic Monthly* 274 (November): 53-80. Retrieved September 1, 2003 from <http://www.theatlantic.com/politics/ecbig/soctrans.htm>.
- Eaton, Judith S. 2000. *Core academic values, quality, and regional accreditation: The challenge of distance learning*. Washington, DC: Council for Higher Education Accreditation.
- Ewell, Peter. 2001. *Assessment and student learning outcomes: A proposed point of departure*. Washington, DC: Council for Higher Ed. Accreditation.

-
- Gaff, Jerry G. 1999. *General education: The changing agenda*. Washington, DC: Association of American Colleges and Universities.
- Gaff, Jerry G., James L. Ratcliff, and Associates. 1996. *Handbook of the undergraduate curriculum*. San Francisco: Jossey-Bass.
- Gould, Stephen J. 1991. *Bully for brontosaurus: Reflections in natural history*. New York: W.W. Norton & Co.
- Jones, Dennis P., and Peter T. Ewell. 1993. *The effect of state policy on undergraduate education: State policy and collegiate learning*. Denver, CO: Education Commission of the States.
- Mayhew, Lewis B., Patrick J. Ford, and Dean L. Hubbard. 1990. *The quest for quality: The challenge for undergraduate education in the 1990's*. San Francisco: Jossey-Bass.
- Middle States Association of Colleges and Schools. n.d. *Student Learning Assessment: Options & Resources*. Philadelphia, PA: Publisher.
- National Council for Accreditation of Teacher Education. 2001. *Professional standards for the accreditation of schools, colleges, and departments of education*. Washington, DC: Publisher.
- National Institute of Education. 1984. *Involvement in learning: Realizing the potential of American higher education*. Washington, DC: US Department of Education.
- Newman, John H. Cardinal. 1982. *The idea of a university*. Ed. Martin J. Svaglic. Notre Dame, IN: University of Notre Dame Press.
- Northwest Association of Schools and Colleges. n.d. *Standards*. Redmond, WA: Publisher.
- Penn State Symposium on General education. 2002. *Students in the balance: General education in the research university*. University Park, PA: Penn State University Press.
- Rudolph, Frederick. 1977. *Curriculum: A history of the American undergraduate course of study since 1636*. San Francisco: Jossey-Bass.
- Schneider, Carol G., and Robert Shoenberg. 1998. *Contemporary understandings of liberal education*. Washington, DC: Association of American Colleges and Universities.
- Smith, Jonathan Z. 1983. "Questioning the great, unexplained aspect of undergraduate education: Why the college major?" *Change* (July/August): 12-15.

Stark, Joan S., and Malcolm A. Lowther. 1989. *Strengthening the ties that bind: Integrating undergraduate liberal and professional study*. Ann Arbor, MI: The Regents of the University of Michigan.

Western Association of Schools and Colleges. 2001. *2001 Handbook of Accreditation*. Alameda, CA: Publisher.

Zlatic, Thomas D. 2000. "Liberalizing professional education: Integrating general and professional ability outcomes." *Journal of Pharmacy Practice* 13 (5): 365-372.

Links

AAC&U

Greater Expectations initiative www.aacu.org/gex/index.cfm

Greater Expectations report www.greaterexpectations.org

Regional Accreditors

The Higher Learning Commission of the North Central Association of Colleges and Schools www.hlcommission.org

Middle States Association of Colleges and Schools www.msache.org

New England Association of Schools and Colleges www.neasc.org

Northwest Association of Schools and Colleges www.nwccu.org

Southern Association of Colleges and Schools www.sacscoc.org

Western Association of Schools and Colleges www.wascenior.org

Specialized Accreditors

The Accreditation Board for Engineering and Technology (ABET) www.abet.org

American Academy for Liberal Education (AALE) www.aale.org

The Association to Advance Collegiate Schools of Business (AACSB)–International www.aacsb.edu

Commission on Collegiate Nursing Education (CCNE) www.aacn.nche.edu

National Council for Accreditation of Teacher Education (NCATE) www.ncate.org