Trends in General Education and Assessment Design

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The Essential Learning Outcomes

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

★ Knowledge of Human Cultures and the Physical and Natural World
  • Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts
  Focused by engagement with big questions, both contemporary and enduring

★ Intellectual and Practical Skills, including
  • Inquiry and analysis
  • Critical and creative thinking
  • Written and oral communication
  • Quantitative literacy
  • Information literacy
  • Teamwork and problem solving
  Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

★ Personal and Social Responsibility, including
  • Civic knowledge and engagement—local and global
  • Intercultural knowledge and competence
  • Ethical reasoning and action
  • Foundations and skills for lifelong learning
  Anchored through active involvement with diverse communities and real-world challenges

★ Integrative and Applied Learning, including
  • Synthesis and advanced accomplishment across general and specialized studies
  Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

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

These widely tested teaching and learning innovations show substantial educational benefits, especially for college students from historically underserved backgrounds. But these practices remain optional rather than expected on most campuses.

First-Year Seminars and Experiences
Many schools now build into the curriculum first-year seminars or other programs that bring small groups of students together with faculty or staff on a regular basis. The highest-quality first-year experiences place a strong emphasis on critical inquiry, frequent writing, information literacy, collaborative learning, and other skills that develop students' intellectual and practical competencies. First-year seminars can also involve students with cutting-edge questions in scholarship and with faculty members' own research.

Common Intellectual Experiences
The older idea of a "core" curriculum has evolved into a variety of modern forms, such as a set of required common courses or a vertically organized general education program that includes advanced integrative studies and/or required participation in a learning community (see below). These programs often combine broad themes—e.g., technology and society, global interdependence—with a variety of curricular and cocurricular options for students.

Learning Communities
The key goals for learning communities are to encourage integration of learning across courses and to involve students with "big questions" that matter beyond the classroom. Students take two or more linked courses as a group and work closely with one another and with their professors. Many learning communities explore a common topic and/or common readings through the lenses of different disciplines. Some deliberately link "liberal arts" and "professional courses"; others feature service learning.

Writing-Intensive Courses
These courses emphasize writing at all levels of instruction and across the curriculum, including final-year projects. Students are encouraged to produce and revise various forms of writing for different audiences in different disciplines. The effectiveness of this repeated practice "across the curriculum" has led to parallel efforts in such areas as quantitative reasoning, oral communication, information literacy, and, on some campuses, ethical inquiry.

Collaborative Assignments and Projects
Collaborative learning combines two key goals: learning to work and solve problems in the company of others, and sharpening one's own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences. Approaches range from study groups within a course, to team-based assignments and writing, to cooperative projects and research.

Undergraduate Research
Many colleges and universities are now providing research experiences for students in all disciplines. Undergraduate research, however, has been most prominently used in science disciplines. With strong support from the National Science Foundation and the research community, scientists are reshaping their courses to connect key concepts and questions with students' early and active involvement in systematic investigation and research. The goal is to involve students with actively contested questions, empirical observation, cutting-edge technologies, and the sense of excitement that comes from working to answer important questions.

Diversity/Global Learning
Many colleges and universities now emphasize courses and programs that help students explore cultures, life experiences, and worldviews different from their own. These studies—which may address U.S. diversity, world cultures, or both—often explore "difficult differences" such as racial, ethnic, and gender inequality, or continuing struggles around the globe for human rights, freedom, and power. Frequently, intercultural studies are augmented by experiential learning in the community and/or by study abroad.

Service Learning, Community-Based Learning
In these programs, field-based "experiential learning" with community partners is an instructional strategy—and often a required part of the course. The idea is to give students direct experience with issues they are studying in the curriculum and with ongoing efforts to analyze and solve problems in the community. A key element in these programs is the opportunity students have to both apply what they are learning in real-world settings and reflect in a classroom setting on their service experiences. These programs model the idea that giving something back to the community is an important college outcome, and that working with community partners is good preparation for citizenship, work, and life.

Internships
Internships are another increasingly common form of experiential learning. The idea is to provide students with direct experience in a work setting—usually related to their career interests—and to give them the benefit of supervision and coaching from professionals in the field. If the internship is taken for course credit, students complete a project or paper that is approved by a faculty member.

Capstone Courses and Projects
Whether they're called "senior capstones" or some other name, these culminating experiences require students nearing the end of their college years to create a project of some sort that integrates and applies what they've learned. The project might be a research paper, a performance, a portfolio of "best work," or an exhibit of artwork. Capstones are offered both in departmental programs and, increasingly, in general education as well.

Key Findings from 2015 Survey of Employers

• It Takes More than a Major: 91% of employers say that a demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than a candidate’s undergraduate major. More than 80% rate critical thinking and analytical reasoning, written and oral communication, teamwork, ethical reasoning, and applied knowledge in real-world settings as “very important.”

• Broad Learning is Expected: 78% of employers agree that, regardless of their major, all college students should acquire broad knowledge in the liberal arts and sciences.

• Students Need Liberal and Applied Learning: Employers strongly endorse educational practices that involve students in active, effortful work. 80% of employers say that it is very important for recent graduates to demonstrate their ability to apply learning in real-world settings.

• Significant Applied Learning Projects Improve Career Readiness: Nearly 4 out of 5 employers say that requiring students to complete a significant applied learning project would improve the quality of college graduates’ preparation for professional success.

Employer Priorities and Consensus on College Learning Outcomes

Knowledge of Human Cultures and the Physical and Natural World
• Knowledge and understanding of democratic institutions and values 87% ■
• Broad knowledge in the liberal arts and sciences 78% ■
• Intercultural skills and understanding of societies and cultures outside the US 78% ■

Intellectual and Practical Skills
• Oral communication 85% ♦
• Teamwork skills in diverse groups 83% ♦
• Written communication 82% ♦
• Critical thinking and analytic reasoning 81% ♦
• Complex problem solving 70% ♦
• Information literacy 68% ♦
• Innovation and creativity 65% ♦
• Technological skills 60% ♦
• Quantitative reasoning 56% ♦

Personal and Social Responsibility
• Problem solving in diverse settings 96% ■
• Civic knowledge, skills, and judgment essential for contributing to the community and to our democratic society 88% ■
• Ethical judgment and decision making 81% ♦

Integrative and Applied Learning
• Applied knowledge in real-world settings 80% ♦

Note: These data are taken from Falling Short? College Learning and Career Success, a 2015 report on findings from a survey of employers and a survey of college students conducted for AAC&U by Hart Research Associates. For a full report on this survey and earlier reports on employer views, see www.aacu.org/leap.

■ indicates percentage of employers who “strongly agree” or “somewhat agree” that, “regardless of a student’s chosen field of study,” every student should attain this area of knowledge or skill.
♦ indicates percentage of employers who rate this outcome as very important (8-10 on a 10 point scale) for recent graduates entering the job market.
Successful Transitions from College to Career
Employer Support for High-Impact, Applied Learning Practices

• 91% of employers say that, whatever their major, all students should have experiences in solving problems with people whose views are different than their own.*

• 73% of employers believe that college graduates’ preparation for careers would improve if they were required to complete a significant applied learning project.*

• College graduates are **2.4 times as likely to be engaged at work** if they had an internship or job that allowed them to apply their classroom learning, were active in cocurricular activities, and worked on a project that took a semester or more to complete.**

Employer Endorsement of High-Impact Practices*
A majority of employers say they are **more likely to hire** college graduates who have completed:

**Internships**
Internship or apprenticeship with a company or organization

| Much more/Somewhat more likely to hire | 94% |

**Senior Projects**
Advanced, comprehensive project in senior year, such as a thesis, senior project, or other major assignment that requires the student to demonstrate depth of knowledge in their major AND their acquisition of research, problem-solving, and communication skills

| 87% |

**Writing-Intensive Courses**
Multiple courses requiring significant writing assignments

| 81% |

**Collaborative Research**
Research project done collaboratively with peers

| 80% |

**Community-Based/Service Learning**
A community-based or service learning project with a community organization

| 69% |

**Study Abroad**
Study abroad program in which a student lives and studies abroad for a semester or longer

| 51% |

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THE GEMs DESIGN PRINCIPLES FOR GENERAL EDUCATION *

PROFICIENCY
Colleges and universities should provide clear statements of desired learning outcomes for all students. Similarly, general education, in all institutional and alternative settings, should provide programs, curricula, and experiences that lead to the development of demonstrable, portable proficiencies aligned to widely valued areas of twenty-first-century knowledge and skill. Students should achieve and demonstrate progressively higher levels of proficiency through problem-centered work on significant issues relevant to their interests and aims.

AGENCY AND SELF-DIRECTION
General education should play a critical role in helping all students understand, pursue, and develop the proficiencies needed for work, life, and responsible citizenship. Students should be active participants in creating an educational plan in which they identify and produce high-quality work on significant questions relevant to their interests and aims. Undergraduate education should enable students to understand the intellectual and personal capacities they are developing that will help them achieve their educational and professional goals, enrich their lives, and act in principled and constructive ways, both as individuals and in their roles in society.

INTEGRATIVE LEARNING AND PROBLEM-BASED INQUIRY
Students should develop and demonstrate proficiency through a combination and integration of curricular, cocurricular, and community-based learning, as well as prior learning experiences, including in institutions and in local, global, and virtual communities and networks. Students should demonstrate proficiencies through inquiry into unscripted questions and problems that are relevant to their interests and aims and where a full understanding of the problem requires insights from multiple areas of study.

EQUITY
General education programs should be equity-minded (see page 9) in design and implementation. This requires a cognitive shift in the ways faculty and administrators understand and address inequalities in outcomes among students of color, students with disabilities, low-income and first-generation students, returning adult students, veterans, and others. General education programs should advance practices and policies that are aimed at achieving the full spectrum of learning outcomes for all students regardless of their backgrounds.

TRANSPARENCY AND ASSESSMENT
Students, faculty members, and other stakeholders should understand what proficiencies are being developed in any general education program, course, or activity, and how these proficiencies can be demonstrated at key milestones in students' progress toward the degree. Students and institutions should be able to point to students' work, especially their "Signature Work" in problem- and project-based inquiry, as demonstrations of proficiency worthy of credit across institutional settings and as a body of work associated with earning the degree.

SAMPLE GUIDED PATHWAY WITH SIGNATURE WORK

Preparing students to do Signature Work will require thoughtful redesign of curricular pathways. This example of a general education pathway is rich in problem-based learning. It can be integrated with any well-designed major. Students taking this pathway would develop core intellectual skills and knowledge through exploration of big questions, and they would be required to apply their learning in their own Signature Work.

E-portfolio shows student's problem-based learning and proficiencies over time

First-Year Inquiry and College Writing

Cross-Cultural and Global Studies

Quantitative Reasoning

Creative & Artistic Inquiry

Cultural/Historical Interpretation

Science Explorations

Socioeconomic Analysis

Thematic Course Clusters
Three or more courses across multiple disciplines, including the major field. A student examines questions important to him/her and to society.

Thematic Course 1

Thematic Course 2

Thematic Course 3

Signature Work
A student's best work, which can take many forms (e.g., capstone, internship, field work, research, community-based research)

*For students in two-year degree programs, this work is Signature Work. For students in four-year degree programs, it is preparation for Signature Work. Transfer students may take the second-year inquiry seminar at the original institution or following transfer.
General Education Maps and Markers: Designing Meaningful Pathways to Student Achievement

General Education Maps and Markers provides clear principles and guidelines to ensure that general education fosters the LEAP Essential Learning Outcomes and key proficiencies important for long-term success, enriches students’ learning in the major, and prepares students to successfully tackle complex problems. Recognizing that general education remains essential but too often underperforms, the authors of these guidelines address the long-standing disconnect between the crucial goals we set for general education and the outdated practices that too often stand in the way of achieving these goals. This is an excellent resource for general education committees and curricular reform efforts. (2015)

$15 members/$25 nonmembers

General Education & Liberal Learning: Principles of Effective Practice

By Paul L. Gaston with J.E. Clark, A.S. Ferren, P. Maki, T.L. Rhodes, K.M. Schilling, and D. Smith

General Education and Liberal Learning: Principles of Effective Practice explores elements common to strong general education programs and examines how strong programs support liberal learning outcomes essential to success in the twenty-first century. The publication discusses how institutions may improve their general education practices and provides numerous examples of successful practices. It is ideal for use by curriculum committees and groups working on reviewing, revising, or assessing general education programs. (2010)

$15 members/$25 nonmembers. eBook Version Available (PDF)

Revising General Education—And Avoiding the Potholes: A Guide for Curricular Change

By Paul L. Gaston and Jerry G. Gaff

This publication calls for a re-envisioning of general education with clear, purposeful pathways for all students, allowing them to actively demonstrate their learning through high-impact practices and teaching strategies that are transferable across disciplines, departments, institutions, and even state systems. Reflecting the core vision articulated in General Education Maps and Markers, Gaston addresses student success in terms of both college completion and achievement of essential twenty-first-century learning outcomes, including those articulated in LEAP and Lumina Foundation’s Degree Qualifications Profile. The publication also addresses how this general education framework helps to foster essential capacities for career, citizenship, and global engagement for today’s diverse and mobile students. (2009)

$12 members/$20 nonmembers

The LEAP Challenge: Education for a World of Unscripted Problems

The LEAP Challenge builds on a decade of LEAP reform efforts on campus to advance Essential Learning Outcomes and high-impact educational practices for all students. The LEAP Challenge calls on colleges and universities to engage students in signature work that will prepare them to integrate and apply their learning to a significant project. (2015)

Free PDF Download Available at: www.aacu.org/leap/challenge.