Future-Ready: LEAP, HIPs, and USG Students’ Best Work

Carol Geary Schneider, Fellow, Lumina Foundation, and President Emerita, AAC&U

**Premise:** The Key to Students’ Future Success, in the Economy and In Democracy, is Their Proficiency in Inquiry Learning; i.e., Strong Preparation for Work on Complex Questions – Questions Where the Best Answer Isn’t Yet Known and May Well Be Vigorously Contested.¹

**Recommendation:** As the USG Momentum Approach Expands to the Whole of College, Fostering an “Inquiry Learning Mindset” Can Become Part of the Strategy (with Growth, Belonging and Purpose)

**Toward a Framework for Inquiry Learning:** The USG has affiliated with AAC&U’s LEAP initiative. LEAP Provides a Useful, Flexible Framework for Preparing Students to Become Intentional, Integrative, and Adaptive Inquiry Learners—Graduates Who Can Apply Their Learning to Unscripted Questions.

**High Impact Practices (HIPs):** When Done Well, HIPs Are A Means to Inquiry Learning and Complex Problem-Solving. By Design, HIPs Immerses Students in Diverse Forms of Problem-Centered Inquiry: Analytical, Applied, Collaborative, Creative, Performative, and Reflective.

**Helping Students Take Ownership of Their Own Inquiry Learning:** HIPs Take on Added Significance When Students Discover Them as a Way to Address Questions That Matter—to Society, to Employers, and Most of All, to Students Themselves.

**HIPs Momentum Across-the-Curriculum:** To Help Students Reap the Full Benefit of HIPs, Educators Will Need to Adopt a Redesign Mindset, Blending HIPs, Guided (i.e., Educationally Intentional) Learning Pathways, and ALL Students’ Preparation for “Signature Work” on Complex Problems.

Note: LEAP uses the term “Signature Work” to describe students’ work on a significant inquiry project—projects that will invariably involve one or more HIP; e.g., research, mentored internship, capstone, etc.

² For more on college learning and future-ready essential skills, see the USG College 2025 Report, 2018

https://www.usg.edu/college2025/full_report


“In order to prepare young people to do the jobs computers cannot do we must re-focus our education system around one objective: giving students the foundational skills in problem-solving and communication that computers don’t have....[T]hese skills are not just the skills of professionals with advanced degrees. What computers have done is to make even traditional blue collar jobs like auto-mechanic—dependent upon one’s ability to problem solve and to communicate.” - Dancing with Robots: Human Skills for Computerized Work (Emphasis added by AAC&U)

Employers Seek Graduates Who Can Deal with Complexity and Diversity

Complexity:

★ 91% of employers say that “the challenges their employees face are more complex than they were in the past.”

★ 93% of employers say that candidates’ demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major

★ 95% of employers agree that their companies put a priority on hiring people with the intellectual and interpersonal skills to help them contribute to innovation in the workplace

Diversity:

★ 96% of employers believe graduates should be able to solve problems with people different than themselves

### School Problems vs. Real-world Problems

<table>
<thead>
<tr>
<th>Scope/parameters of the problem</th>
<th>School problems/case studies</th>
<th>Authentic, unscripted problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defined, given to the student; hypothetical or historical</td>
<td>Not well defined; there is uncertainty and ambiguity and in many cases, deep disagreement</td>
<td></td>
</tr>
</tbody>
</table>

| Solution | One or more right solutions, known by the instructor (or determined by history) | No known or right solution (or the challenge is to find solutions that are better or radically different from those in existence) |

| What students are required to learn | Predetermined body of knowledge deemed relevant to the problem given by the instructor | Emerging areas of inquiry, which may span different disciplines, and frequently involve field-based learning as well |

| Skills that are fostered | Analytical and communication skills, problem-solving skills | Problem-finding and problem-framing skills, engaging diverse perspectives and experiences; synthesis skills (to make sense of data) and creative skills (to come up with new solutions) |

| Ownership of the process | Usually instructor driven, may involve collaborative work | Students must take ownership of the problem, the inquiry and the implications of their choices |

| Role of the instructor | Sage on the stage | Guide on the side |

The LEAP Framework for Quality Learning, Inclusive Excellence, and Career Success

Higher Education Is Creating New Directions for Liberal Education That Link Liberal Arts and Career Fields and Foster Inclusive Excellence. Through its LEAP initiative—Liberal Education and America’s Promise—the Association of American Colleges and Universities (AAC&U) has developed a 21st century framework for an empowering and contemporary college education. Lumina Foundation has developed the Degree Qualifications Profile (DQP) which provides design principles that help faculty members translate broad goals for quality liberal learning into well-designed degree programs—encompassing all majors—at the associate, bachelor’s, and master’s level. Both frameworks apply to all college learners, including adults.

To Provide Students With an Empowering Education, LEAP Promotes

**Essential Learning Outcomes**—the inquiry learning outcomes people need for success in life, civil society, and work in the 21st century. These outcomes include 1) broad knowledge of culture, science and society, as well as competence in specific major fields; 2) intellectual and practical skills, including inquiry and analysis; critical and creative thinking; written and oral communication; quantitative literacy; information literacy; teamwork and problem-solving with diverse partners; 3) studies and experiences related to democratic and global citizenship and intercultural competence; and 4) hands-on learning experiences that foster integrative, applied and adaptive learning.

**High-Impact Educational Practices** (HIPs)—ways of engaging and challenging students—including first year experiences, intensive writing, collaborative assignments, diversity and intercultural experiences; undergraduate research, service learning, internships, learning communities and major (capstone) projects that help students achieve and demonstrate Essential Learning Outcomes.

**Signature Work**—challenging higher education to prepare all students to complete a substantial cross-disciplinary project in a topic significant to the student and society, as part of the expected pathway to a college degree and career success. The signature project can take many forms—e.g., capstone, internship, field work, research, community-based projects, creative work, ePortfolio, etc.

**Authentic Assessments**—using students’ own work and faculty-validated VALUE rubrics to probe whether individual students have developed the Essential Learning Outcomes and can apply their learning to complex questions and significant inquiry projects.

**Cross-Cultural Learning Is Essential, not Optional:** Keyed to the Needs of a Diverse and Complex World, both the LEAP Framework and the DQP Emphasize Multiple Forms of Diversity Learning:

- **Broad, Big Picture Learning Across the Liberal Arts and Sciences**—Including Knowledge of Histories, Cultures, and World Views In Addition To One’s Own—US and Global;
- **High Level Analytic Inquiry and Communication Skills**—Including the Skills of Engaging Differing Perspectives and Solving Problems with Diverse Partners, on Campus and in Society;
- **Personal and Social Responsibility**—With Explicit Attention to Civic, Cross-Cultural And Ethical Questions, in the Curriculum, Professional Roles, and Diverse “Real-World” Contexts;
- **Integrative, Adaptive and Applied Learning**—Showing That Students Can Apply Their Knowledge, Skills, and Examined Responsibilities to Significant Questions and Problems, including Problems That a Diverse and Justice-Seeking Democracy Urgently Needs to Solve.

**The Challenge Ahead:** Helping Students Engage, Practice and Develop These Capacities, Both as Catalysts for Powerful College Learning and—Crucially—for Their Lives Beyond College.

Adapted from AAC&U and Lumina Sources by Carol Geary Schneider, President Emerita, AAC&U and Fellow, Lumina Foundation
KEY FINDINGS FROM
2018 EMPLOYER RESEARCH

• **A College Degree Is Important.** 82% of executives and 75% of hiring managers believe that it is very important or essential to complete a college education. 88% of executives and 85% of hiring managers consider the money and time involved in getting a college degree to be worthwhile.

• **Employers Have More Confidence in Colleges and Universities than Does the American Public.** Among executives and hiring managers, 63% express confidence in colleges and universities, a notably higher proportion than among the American public. In a 2018 Gallup poll, 45% of adults nationwide express confidence in colleges and universities.*

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### Employer Priorities on Select College Learning Outcomes

<table>
<thead>
<tr>
<th>Intellectual and Practical Skills</th>
<th>Very important for recent grads</th>
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<tbody>
<tr>
<td></td>
<td>Executives</td>
</tr>
<tr>
<td>Oral communication</td>
<td>80%</td>
</tr>
<tr>
<td>Teamwork skills with diverse groups</td>
<td>77%</td>
</tr>
<tr>
<td>Written communication</td>
<td>79%</td>
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<tr>
<td>Critical thinking and analytic reasoning</td>
<td>78%</td>
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<tr>
<td>Complex problem solving</td>
<td>67%</td>
</tr>
<tr>
<td>Information literacy</td>
<td>73%</td>
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<tr>
<td>Innovation and creativity</td>
<td>61%</td>
</tr>
<tr>
<td>Technological skills</td>
<td>60%</td>
</tr>
<tr>
<td>Quantitative reasoning</td>
<td>54%</td>
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<table>
<thead>
<tr>
<th>Personal and Social Responsibility</th>
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<tbody>
<tr>
<td>Ethical judgment and decision making</td>
<td>77%</td>
</tr>
<tr>
<td>Work independently—set priorities, manage time/deadlines</td>
<td>77%</td>
</tr>
<tr>
<td>Self-motivated—ability to take initiative and be proactive</td>
<td>76%</td>
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<table>
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<tr>
<th>Integrative and Applied Learning</th>
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</thead>
<tbody>
<tr>
<td>Applied knowledge in real-world settings</td>
<td>73%</td>
</tr>
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High-Impact Educational Practices

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.

ePortfolios
ePortfolios are the latest addition to AAC&U’s list of high-impact educational practices, and higher education has developed a range of ways to implement them for teaching and learning, programmatic assessment, and career development. ePortfolios enable students to electronically collect their work over time, reflect upon their personal and academic growth, and then share selected items with others, such as professors, advisors, and potential employers. Because collection over time is a key element of the ePortfolio process, employing ePortfolios in collaboration with other high-impact practices provides opportunities for students to make connections between various educational experiences.

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.
EMPLOYER RESEARCH SUPPORTS
HIGH-IMPACT, APPLIED LEARNING PRACTICES

• 93% of executives and 94% of hiring managers say that they would be more likely to hire a recent graduate who has held an internship or apprenticeship with a company or organization, including 52% of executives and 60% of hiring managers who would be much more likely to do so.

• 76% of executives and 87% of hiring managers rate it very important that recent graduates demonstrate the ability to apply knowledge and skills in real-world settings, yet only 33% of executives (43-point gap) and 39% of hiring managers (48-point gap) think that recent graduates are well prepared in this area.

<table>
<thead>
<tr>
<th>More likely to hire employees with these experiences:</th>
<th>Executives</th>
<th>Hiring Managers</th>
</tr>
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<tbody>
<tr>
<td>Internships/apprenticeship with company/organization</td>
<td>93%</td>
<td>94%</td>
</tr>
<tr>
<td>Multiple courses requiring significant writing assignments</td>
<td>82%</td>
<td>72%</td>
</tr>
<tr>
<td>Research project done collaboratively with peers</td>
<td>81%</td>
<td>81%</td>
</tr>
<tr>
<td>Advanced, comprehensive senior project/thesis</td>
<td>80%</td>
<td>76%</td>
</tr>
<tr>
<td>Field-based project in diverse community</td>
<td>72%</td>
<td>83%</td>
</tr>
<tr>
<td>Service Learning project with community organization</td>
<td>71%</td>
<td>78%</td>
</tr>
<tr>
<td>Study Abroad program</td>
<td>54%</td>
<td>47%</td>
</tr>
</tbody>
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www.aacu.org/leap/public-opinion-research.
Participation in Multiple High Impact Practices and Students’ Gains in Deep Learning

Within-Group Comparisons for First-Generation and Transfer Students: Average Boost in Deep Learning Experiences and Self-Reported Gains with Multiple High-Impact Practices (HIPs) vs. No Participation

Within-Group Comparisons by Racial or Ethnic Category: Average Boost in Deep Approaches to Learning and Self-Reported Gains in Learning with Multiple High-Impact Practices (HIPs) vs. No Participation

Source: Assessing High-Impact Learning for Underserved Students by Ashley Finley and Tia McNair (AAC&U, 2013). This study uses NSSE scales for learning and NSSE evidence for 3 state systems.
Blending HIPs and Guided Learning Pathways for Quality and Equity, By Design

*With Equity and Belonging Paramount Values, Institutions Meld High Touch and High Tech to Support and Monitor Student Engagement and Progress, Giving Special Attention to Frequent or Systemic Barriers and Challenges

Build an intentional and welcoming community so that every student feels known, respected, supported and savvy about where to find help.

High touch: provide mentoring and individualized degree plans to connect degree program pathways (and developmental education, if needed) with students’ own goals, lives, and emerging interests.

High tech: deploy data analytics to provide timely information about student progress and problems, and to address systemic disparities or barriers.

*Faculty Define and Programs Address Essential Learning Outcomes – Across Systems and Within Institutions

Enable a constant curricular and co-curricular focus on the most important purposes of college learning—preparing students to tackle complex questions, economic, democratic, and personal.

Map Essential Learning Outcomes across all courses and requirements in the program, at progressively more challenging levels from initial courses to final studies. (Lumina Foundation’s Degree Qualifications Profile provides helpful prompts for designing programs that foster high quality learning. See www.luminafoundation.org/DQP.)

*Sequence Program Courses, HIPs, and Well-Designed Assignments to Foster Essential Learning Outcomes

Connect the curriculum visibly with the wider world and students’ own questions and career hopes, while providing clarity, direction and progress points or “markers” for students. Include HIPs in progress points.

Provide multiple on-ramps for students in transition and/or who need supplemental work.

Where relevant, use digital tools to free time for student/faculty work on projects.

*All Students Participate Frequently in High Impact and/or Active Learning Practices, From First to Final Year

Shift the focus from passive listening and rote assessments to students’ own effortful engagement with questions, problems, and projects, including community- or work-based projects.

Ensure students’ constant practice of essential learning outcomes such as analytic inquiry, engaging diverse perspectives, collaborative problem-solving, ethical inquiry, quantitative reasoning, information literacy, communication skills, etc.

*Every Student Completes Applied Learning Projects—Connected to Program and Student Goals and Interests

Connect college learning with open or unscripted questions important to the student and to society.

Prepare and enable students to become self-directed learners.

Embrace AAC&U’s LEAP Challenge: which invites higher education to make students’ “signature work” a catalyst for their integrative and applied learning.

*Students’ Own Work—including Their Applied Learning Projects—Provides the Primary Evidence of their Progress Toward Degree Level Learning and Educational Achievement

Reduce the emphasis on assessments that are disconnected by design from the actual program of study; shift our focus to students’ own “best work.” (Use AAC&U’s LEAP VALUE rubrics to track student progress on key learning outcomes and monitor equity of learning. See www.aacu.org/VALUE) Schneider, 2018
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 with 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 students problem-based learning and proficiencies over time