Guided Pathways, Connected Learning:
A Framework for First Generation Student Success

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“Bringing Quality and Equity Together: Mapping Guided Pathways for First Generation Student Success”

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A GUIDE TO FREQUENTLY CONFUSED TERMS

** ** LIBERAL EDUCATION: An approach to college learning that empowers individuals and prepares them to deal with complexity, diversity and change. It emphasizes broad knowledge of the wider world (e.g., science, culture and society) as well as in-depth achievement in a specific field of interest. It helps students develop a sense of social responsibility as well as strong intellectual and practical skills that span all major fields of study, such as communication, analytical and problem-solving skills, and includes a demonstrated ability to apply knowledge and skills in real-world settings.

LIBERAL ARTS: Specific disciplines (e.g., the humanities, sciences, and social sciences)

LIBERAL ARTS COLLEGE: A particular institutional type – often small, often residential – that facilitates close interaction between faculty and students, while grounding its curriculum in the liberal arts disciplines.

ARTES LIBERALES: Historically, the basis for the modern liberal arts: the trivium (grammar, logic and rhetoric) and the quadrivium (arithmetic, geometry, astronomy, and music).

GENERAL EDUCATION: The part of a liberal education curriculum shared by all students. It provides broad learning in liberal arts and science disciplines and forms the basis for developing important intellectual, civic and practical capacities. General education can take many forms, and increasingly includes introductory, advanced, and integrative forms of learning.

Adapted from: Greater Expectations: A New Vision for Learning as a Nation Goes to College (Association of American Colleges & Universities, 2002)

** *Three in four employers would recommend this kind of education to their own child or a young person they know.

These findings are taken from a survey of employers commissioned by AAC&U and conducted by Peter A. Hart Associates in 2013. For a full report on the survey, “It Takes More than a Major: Employer Priorities for College Learning Student Success,” and its complete findings, see www.aacu.org/leap.

Designing Guided Learning Pathways for Quality and Inclusive Excellence

*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.

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

Use the DQP Matrix (see page 7) to map Essential Learning Outcomes across all courses and requirements in the program, at progressively more challenging levels from initial courses to final studies.

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

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 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*

Connect college learning with unscripted questions important to the student.

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)]
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.
## AAC&U Member Institutions’ Learning Outcomes for All Students

### Knowledge of Human Cultures and the Physical and Natural World

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities</td>
<td>92%</td>
<td>92%</td>
</tr>
<tr>
<td>Sciences</td>
<td>91%</td>
<td>92%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>90%</td>
<td>89%</td>
</tr>
<tr>
<td>Global/World Cultures</td>
<td>87%</td>
<td>89%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>87%</td>
<td>92%</td>
</tr>
<tr>
<td>Diversity in the United States</td>
<td>73%</td>
<td>73%</td>
</tr>
<tr>
<td>United States History</td>
<td>49%</td>
<td>47%</td>
</tr>
<tr>
<td>Languages Other Than English</td>
<td>42%</td>
<td>48%</td>
</tr>
<tr>
<td>Sustainability</td>
<td>24%</td>
<td>27%</td>
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</table>

### Intellectual and Practical Skills

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing skills</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>95%</td>
<td>98%</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>91%</td>
<td>94%</td>
</tr>
<tr>
<td>Oral Communication</td>
<td>88%</td>
<td>82%</td>
</tr>
<tr>
<td>Intercultural Skills</td>
<td>79%*</td>
<td>79%*</td>
</tr>
<tr>
<td>Information Literacy</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>Research skills</td>
<td>65%</td>
<td>75%</td>
</tr>
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</table>

### Personal and Social Responsibility

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercultural Skills</td>
<td>79%*</td>
<td>79%*</td>
</tr>
<tr>
<td>Ethical Reasoning</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Civic Engagement</td>
<td>68%</td>
<td>63%</td>
</tr>
</tbody>
</table>

### Integrative Learning

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of Learning</td>
<td>66%</td>
<td>65%</td>
</tr>
<tr>
<td>Integration of Learning</td>
<td>63%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Note: In 2015, 85% of AAC&U member institutions surveyed reported that they had a common set of learning outcomes for all students. This percentage was up from 78% who reported this in the earlier 2009 study. Percentages cited above are the percentage of those with campus-wide goals reporting that this outcome is one of the learning goals they have for all students. The four categories of learning outcomes correspond to a set of “Essential Learning Outcomes” developed as part of AAC&U’s LEAP initiative. See www.aacu.org/leap. For 2009 findings, see Learning and Assessment: Trends in Undergraduate Education—A Survey Among Members of the Association of American Colleges and Universities (AAC&U and Hart Research Associates, 2009). For 2015 findings, see xxx.

* The starred items are shown in two learning outcome categories because they apply to both.
### Employer Priorities for Most Important College Learning Outcomes

#### Knowledge of Human Cultures and the Physical and Natural World
- Broad knowledge in the liberal arts and sciences: 78%
- Knowledge and understanding of democratic institutions and values: 87%
- 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: 86%
- Ethical judgment and decision making: 81%

#### Integrative and Applied Learning
- Applied knowledge in real-world settings: 80%

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**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.
Intellectual skills should be practiced across the educational experience and demonstrated in the context of both broad and specialized studies; in civic and global learning; and in applied and collaborative learning. This matrix suggests how a focus on students’ effortful practice can be used for assignment planning and for assessment. To complete the matrix, program faculty should decide where and how in their programs students will practice key intellectual skills and take part in applied learning tasks and assignments—an exercise that should also inform curriculum development, improvement, and assessment, including prior learning assessment.

### Intellectual Skills

<table>
<thead>
<tr>
<th>Analytic Inquiry</th>
<th>Use of information resources</th>
<th>Engaging diverse perspectives</th>
<th>Ethical reasoning</th>
<th>Quantitative fluency</th>
<th>Communicative fluency</th>
<th>Program-specific intellectual skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specialized Knowledge</strong></td>
<td><strong>Broad and Integrative Knowledge</strong></td>
<td><strong>Civic and Global Learning</strong></td>
<td><strong>Applied and Collaborative Learning</strong></td>
<td><strong>Institution-Specific Emphases°</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

° E.g., religious, artistic, technological, scientific, etc.

Adapted from: *The Degree Qualifications Profile*, pages 22-23 (released by Lumina Foundation, October 2014).
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.

Impact of High Impact Practices on First Academic Year GPA by Race/Ethnicity

Impact of High Impact Practices on the Probability of Returning for the Second Year of College by Race

From Kuh, *High Impact Educational Practices: What they are, What has access to them, and why they matter* (AAC&U, 2008)
Impact of Participation in High Impact Practices on Percentage of Senior NSSE Respondents Graduating on Time by Racial & Ethnic Background

Source: Does Participation in Multiple High Impact Practices Affect Student Success at Cal State Northridge? by Bettina Huber (unpublished paper on California State University, Northridge students, 2010).

Relationships between Selected High-Impact Activities, Deep Learning, and Self-Reported Gains

Employer Support for High Impact Practices

Hart Research Associates, 2015

- 96% of employers say that, whatever their major, all students should have experiences in solving problems with people whose views are different than their own.

- 80% of employers say an electronic portfolio demonstrating a student’s work and key skill and knowledge areas would be useful in evaluating potential candidates for hire.

- Employers strongly support requiring students to complete a significant applied learning project; 73% believe it would improve the quality of college graduates’ preparation for careers and 70% believe it would improve the quality of college learning.

- Employers say they are more likely to consider hiring recent college graduates who have completed an applied project-based learning experience. Employers give the highest marks to the following applied learning practices:

<table>
<thead>
<tr>
<th>Graduates More Likely to Be Hired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship/apprenticeship with company/organization</td>
</tr>
<tr>
<td>Student thesis/project demonstrating knowledge, research, problem-solving, communication skills</td>
</tr>
<tr>
<td>Multiple courses involving significant writing</td>
</tr>
<tr>
<td>Research project done collaboratively with peers</td>
</tr>
<tr>
<td>Service-learning project with community organization</td>
</tr>
<tr>
<td>Field project in diverse community with people from different backgrounds/cultures</td>
</tr>
<tr>
<td>Study abroad program</td>
</tr>
</tbody>
</table>

Source: Falling Short? College Learning and Career Success (Survey conducted for AAC&U by Hart Research Associates, 2015)
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

Second-Year Inquiry Seminar*
Cross-disciplinary questions and student signature project

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.