Liberal Education & America’s Promise

Excellence for Everyone as a Nation Goes to College

Advancing Student Learning and Success through Undergraduate Research

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McNair Promising Practices
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Critical Questions

• How are institutions preparing all students for the kinds of challenges they will confront in life, work and citizenship, both U.S. and global?

• How can we help students to integrate and apply their knowledge and skills to complex, unscripted problems and new settings?
Critical Questions

• How can campus educators design innovative curricular pathways that provide students with intentionally designed learning experiences to help prepare them for success?
Critical Questions

How does your institution identify and design the high-impact practices that are best suited for meeting the educational needs of your students?
About AAC&U

• The leading national association concerned with the quality of student learning in college

• More than 1,400 institutional members – half public/half private, two year, four-year, research universities, state systems, liberal arts, international

• A network of over 30,000 faculty members, academic leaders, presidents and others working for educational reform

• A meeting ground for all parts of higher education – about our shared responsibilities to students and society
Liberal Education and America’s Promise (LEAP)

LEAP is a national initiative that champions the importance of a twenty-first-century liberal education—for individual students and for a nation dependent on economic creativity and democratic vitality.
The LEAP Essential Learning Outcomes

Knowledge of Human Cultures and the Physical and Natural World

- **Focused** on engagement with big questions, enduring and contemporary

Intellectual and Practical Skills

- **Practiced** extensively across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

Personal and Social Responsibility

- **Anchored** through active involvement with diverse communities and real-world challenges

Integrative and Applied Learning

- **Demonstrated** through the application of knowledge, skills, and responsibilities to new settings and complex problems
Essential Learning Outcomes

• Inquiry and Analysis
• Critical and Creative Thinking
• Written and Oral Communication
• Quantitative Literacy
• Information Literacy
• Teamwork and Problem Solving
• Civic Knowledge and Engagement—local and global
• Intercultural Competence
• Ethical Reasoning
• Lifelong Learning
• Across general and specialized studies
Of institutions have a common set of intended learning outcomes for all students. Report that almost all of their students understand those intended learning outcomes.

Source: AAC&U Member Survey, 2016 Recent Trends in General Education Design, Learning Outcomes, and Teaching Approaches
Is this true for your campus?

Is this true for your students?
Falling Short?
College Learning and Career Success

Key findings from survey among 400 employers and 613 college students conducted in November and December 2014
For The Association of American Colleges and Universities by Hart Research Associates
Methodology

- Online survey among 400 executives at private-sector and nonprofit organizations that have 25 or more employees
  - Each reports that 25% or more of their new hires hold an associate degree from a two-year college or a bachelor’s degree from a four-year college

- Online survey among 613 college students, all within a year of obtaining a degree or, in the case of two-year students, transferring to a four-year college
  - Sample includes 304 students at four-year public colleges, 151 students at four-year private colleges, and 158 students at two-year colleges
Learning Outcomes that at Least Four in Five Employers Rate as Very Important

85% Oral communication
83% Working effectively with others in teams
82% Written communication
81% Ethical judgment and decision-making
81% Critical/analytical thinking
80% Applying knowledge/skills to real world

*8, 9, 10 ratings on zero-to-10 scale, 10 = very important

*Employers
*Students
Employers say they are much more likely to consider hiring recent college graduates who have completed an applied learning or project-based learning experience.

94% Internship/apprenticeship
87% Senior thesis/project
80% Collaborative research project
69% Service learning project
### Attributes employers seek on a candidate’s resume

<table>
<thead>
<tr>
<th>Attribute</th>
<th>% of respondents</th>
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</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>80.1%</td>
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<tr>
<td>Ability to work in a team</td>
<td>78.9%</td>
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<tr>
<td>Communication skills (written)</td>
<td>70.2%</td>
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<tr>
<td>Problem-solving skills</td>
<td>70.2%</td>
</tr>
<tr>
<td>Communication skills (verbal)</td>
<td>68.9%</td>
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<tr>
<td>Strong work ethic</td>
<td>68.9%</td>
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<tr>
<td>Initiative</td>
<td>65.8%</td>
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<tr>
<td>Analytical/quantitative skills</td>
<td>62.7%</td>
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<tr>
<td>Flexibility/adaptability</td>
<td>60.9%</td>
</tr>
<tr>
<td>Technical skills</td>
<td>59.6%</td>
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<tr>
<td>Interpersonal skills (relates well to others)</td>
<td>58.4%</td>
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<tr>
<td>Computer skills</td>
<td>55.3%</td>
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<tr>
<td>Detail-oriented</td>
<td>52.8%</td>
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</tbody>
</table>

*Source: Job Outlook 2016, National Association of Colleges and Employers*
Most employers say they would find e-portfolios useful.

Employers: How useful do you find/would you find this in helping you evaluate job applicants'/recent college graduates’ potential to succeed at your company?

- College transcript: 45% Very/fairly useful, 9% Very useful
- Electronic portfolio of student work summarizing and demonstrating accomplishments in key skill and knowledge areas: 80% Very useful, 36% Very/fairly useful
“High-Impact Practices” that Help Students Achieve the Outcomes

- First-Year Seminars and Experiences
- Common Intellectual Experiences
- Learning Communities
- Writing-Intensive Courses
- Collaborative Assignments & Projects
- Undergraduate Research
- Diversity/Global Learning
- Service Learning, Community-Based Learning
- Internships
- Capstone Courses and Projects
WHAT MAKES A PRACTICE HIGH-IMPACT?
HIPs: Eight Key Elements

- Performance Expectations Set at Appropriately High Levels
- Significant Investment of Time and Effort by Students Over an Extended Period of Time
- Interactions with Faculty and Peers about Substantive Matters
- Experiences with Diversity
- Frequent, Timely and Constructive Feedback
- Structured Opportunities to reflect and Integrate Learning
- Opportunities to Discover Relevance of Learning Through Real-World Applications
- Public Demonstration of Competence

Intentionality of Undergraduate Research (A High-Impact Practice)

- Project Selection
- Design
- Access

Learning Outcomes
- Defined
- Transparent
- Measurable

Assessment
- Evidence of Achievement
- Reflective
Critical Questions

- What are your goals for improving student learning?
- How are the goals connected to the institution’s mission and vision for student success and learning?
- What is your evidence of student achievement of outcomes?
How “high-impact”? And for whom?

- Data from 38 institutions (CA, OR, WI)
- NSSE data from 2006-2008 (one year of data from each campus)
- HIPs examined
  - Learning Communities
  - Service learning
  - Study Abroad
  - Internship
  - Capstone
  - Student/Fac. Res.
- 0-6 experiences
- 20,000+ students
  - First Year = 36.5%, SR = 51.1%
    (included Soph., Jr, Unclassified)
- Transfer = 33%
- First-generation = 51%
- Race
  - White = 58.7%
  - African American = 2.5%
  - Asian American = 11.8%
  - Hispanic = 13.2%
  - (Other = 6.2%, No Response = 7.5%)

What are the effects of participation in certain high-impact experiences?

What are the effects of participation in multiple high-impact experiences?
Outcomes Examined

• **Deep Learning** = Pursuit of learning beyond memorization to seek underlying meanings & relationships

• **Gains in General Education** = Writing/speaking skills, acquire broad general educ, analyzing quant. probs

• **Gains in Practical Competence** = Work related knowledge & skills, working effectively w/ others, use of technology, quant. problem-solving, solving complex real-world problems

• **Gains in Personal & Social Development** = Developing ethics, understanding diff. bkgrds, understanding self, contributing to community, voting

HIP Participation vs. No Participation: Avg. Boost Across All Outcomes

Effect of participation in Multiple HIPs on Outcomes

![Bar chart showing the effect of participation in Multiple HIPs on outcomes. The chart compares different categories such as Deep Learning, Gains General Ed., Gains Practical, and Gains Pers. & Soc. across different HIP participation levels: No HIPs, 1-2 HIPs, 3-4 HIPs, and 5-6 HIPs.]
What is the effect of participation in multiple HIPs relative to students in the same group who do NOT participate?
Avg % Increase in Outcomes w/ Participation in Multiple HIPs Vs. No Participation (by First-Generation & Transfer Status)

Avg % Increase in Outcomes w/ Participation in Multiple HIPs Vs. No Participation (by Race)

What makes undergraduate research effective

• Challenge students to confront novel ideas
• Engage students in the collection and analysis of original data
• Emphasize opportunities for applying research to real contexts or solving real problems
• Increase the time students dedicate to the project
• Maximize opportunities for students and faculty to interact and engage in substantive matters

What makes undergraduate research effective

- Be relevant and interesting to students, and influenced by their ideas to maximize engagement and learning
- Provide opportunities for students to receive frequent and meaningful feedback about their work
- Increase students ownership of the project over time
- Provide an occasion for students to present their work in oral and written formats
- Allow students to work in teams

List of VALUE Rubrics

- Knowledge of Human Cultures & the Physical & Natural Worlds
  - Content Areas → No Rubrics
- Intellectual and Practical Skills
  - Inquiry & Analysis
  - Critical Thinking
  - Creative Thinking
  - Written Communication
  - Oral Communication
  - Reading
  - Quantitative Literacy
  - Information Literacy
  - Teamwork
  - Problem-solving

- Personal & Social Responsibility
  - Civic Knowledge & Engagement
  - Intercultural Knowledge & Competence
  - Ethical Reasoning
  - Foundations & Skills for Lifelong Learning
  - Global Learning

- Integrative & Applied Learning
  - Integrative & Applied Learning
The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can by shared nationally through a common dialog and understanding of student success.

Definition

Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

Framing Language

This rubric is designed to be transdisciplinary, reflecting the recognition that success in all disciplines requires habits of inquiry and analysis that share common attributes. Further, research suggests that successful critical thinkers from all disciplines increasingly need to be able to apply those habits in various and changing situations encountered in all walks of life.

This rubric is designed for use with many different types of assignments and the suggestions here are not an exhaustive list of possibilities. Critical thinking can be demonstrated in assignments that require students to complete analyses of text, data, or issues. Assignments that cut across presentation mode might be especially useful in some fields. If insight into the process components of critical thinking (e.g., how information sources were evaluated regardless of whether they were included in the product) is important, assignments focused on student reflection might be especially illuminating.

Glossary

The definitions that follow were developed to clarify terms and concepts used in this rubric only.

- Ambiguity: Information that may be interpreted in more than one way.
- Assumptions: Ideas, conditions, or beliefs (often implicit or unstated) that are "taken for granted or accepted as true without proof." (quoted from www.dictionary.reference.com/browse/assumptions)
- Context: The historical, ethical, political, cultural, environmental, or circumstantial settings or conditions that influence and complicate the consideration of any issues, ideas, artifacts, and events.
- Literal meaning: Interpretation of information exactly as stated. For example, "she was green with envy" would be interpreted to mean that her skin was green.
- Metaphor: Information that is (intended to be) interpreted in a non-literal way. For example, "she was green with envy" is intended to convey an intensity of emotion, not a skin color.
## Criteria

**Critical Thinking** is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

### Levels

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Capstone</th>
<th>Milestones</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation of issues</strong></td>
<td>Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.</td>
<td>Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.</td>
<td>Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.</td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.</td>
<td>Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.</td>
</tr>
<tr>
<td><strong>Influence of context and assumptions</strong></td>
<td>Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.</td>
<td>Identifies own and others' assumptions and several relevant contexts when presenting a position.</td>
<td>Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.</td>
</tr>
<tr>
<td><strong>Student's position (perspective, thesis/hypothesis)</strong></td>
<td>Specific position (perspective, thesis/hypothesis) is informed, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.</td>
</tr>
<tr>
<td><strong>Conclusions and related outcomes (implications and consequences)</strong></td>
<td>Conclusions and related outcomes (implications and consequences) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.</td>
<td>Conclusions and related outcomes (implications and consequences) are identified clearly.</td>
<td>Conclusion is inconsistently tied to some of the information discussed; related outcomes (implications and consequences) are oversimplified.</td>
</tr>
</tbody>
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Guiding Questions

• What are promising direct assessment strategies for evaluating students’ achievement of learning outcomes, as a result of their participation in high-impact practices?

• How can campus educators provide higher levels of transparency of the learning outcomes to help students understand the benefits to their lifelong success and career preparation?
Guiding Questions

• How can the performance descriptors identified in the rubrics inform the design of high-impact practices?
Current VALUE Initiative (2014-2016)

92 institutions submitted 21,189 student work products for assessment by 288 faculty using VALUE rubrics.
Intentionality
Cycle of Intentional Learning

AAC&U Resources
Thank you!

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