



# *Information to Improve Undergraduate Teaching and Learning: Some Examples from the U.S.*

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## *Topics for This Talk*

### ■ The Place of “Generic” and Disciplinary Skills in U.S. Higher Education

- Employer Demands for Generic Skills as Well as Disciplinary Skills
- General Education as Well as Study in Depth
- The “Degree Qualifications Profile (DQP)”

### ■ Gathering Information About Generic Skills

- Mapping the Curriculum
- Some Approaches to Learning Outcomes Assessment





## *Examples of Generic Skills*

- Cognitive:
  - Communications (Written and Oral)
  - Critical Thinking and Problem Solving
  
- Non-Cognitive
  - Empathy and Ethics
  - Working with Others
  - Taking Responsibility



## *Typical “General Education” Requirement*

- About a Third of the Curriculum (40-45 Credits)
  
- Alternative Curriculum Models:
  - “Common Core”
  - Distribution Requirement Covering
    - Written Communication, Mathematics
    - Natural Sciences, Social Sciences, Humanities (and Sometimes Fine Arts)





## *Generic Skills are Developed in Both General Education and Disciplinary Study*

- General Education Courses are in a Discipline
  - Concentration Courses Develop “Discipline-Specific” Generic Skills
  - The OECD AHELO Example:
    - “Above Content” Thinking in Economics
    - “Thinking Like an Engineer”
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## *Teaching Generic Skills: Common Approaches*

- A “General Education” Block of Courses
  - Embed These Skills in Disciplinary Teaching
  - Particular Approaches to Teaching and Learning:
    - Collaboration and Group Work
    - Internships and Fieldwork
    - Capstone Courses and Projects
    - Role of the “Co-Curriculum”
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## *The Degree Qualifications Profile (DQP)*

- Three Degree Levels (Associate, Bachelor's, Master's)
  - Five Core Areas (Specialized Knowledge, Broad and Integrative Knowledge, Intellectual Skills, Applied and Collaborative Learning, Civic and Global Learning)
  - Framed as Successively Inclusive Hierarchies of “Action Verbs Statements” to Describe Competencies at Each Degree Level
  - Attempt is to Align Teaching and Learning Across Institutions and Faculties
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## *An Example: Communication Skills*

- **Associate Level**: The student presents substantially error-free prose in both argumentative and narrative forms to general and specialized audiences
  - **Bachelor's Level**: The student constructs sustained, coherent arguments and/or narratives and/or explications of technical issues and processes, in two media, to general and specialized audiences
  - **Master's Level**: The student creates sustained, coherent arguments or explanations and reflections on his or her work or that of collaborators (if applicable) in two or more media or languages, to both general and specialized audiences
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## *An Example: Engaging Diverse Perspectives*

■ **Associate Level:** Describes how different cultural perspectives would affect his or her interpretations of prominent problems in politics, society, the arts, and/or global relations

■ **Bachelor's Level:** Constructs a cultural, political, or technological alternative vision of either the natural or human world, embodied in a written project, laboratory report, exhibit, performance, or community service design; defines the distinct patterns in this alternative vision; and explains how they differ from current realities

■ **Master's Level:** Addresses a core issue in his/her field of study from the perspective of either a different point in time, or a different culture, political order, or technological context, and explains how the alternative perspective contributes to results that depart from current norms, dominant cultural assumptions, or technologies—all demonstrated through a project, paper, or performance

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## *What Is a “Course Map?”*

■ A Matrix that Arrays:

- Designated Competencies on One Axis
- Individual Courses on the Other Axis

■ Each Cell Contains Information On:

- Whether and How the Competency Is Developed
  - Whether and How the Competence is Assessed
  - The Level at Which the Competence is Assessed
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## *A Course Level Curriculum Map*

Course	Intellectual Skills -- Bachelors Level					
	Analytical	Use of	Engaging	Quantitative	Communications	
	Inquiry	Information	Diverse	Fluency	Fluency	
		Resources	Perspectives			
Course #1						
Addressed?						
Tested or Assessed?						
Course #1						
Addressed?						
Tested or Assessed?						
Course #2						
Addressed?						
Tested or Assessed?						
Course #3						
Addressed?						
Tested or Assessed?						
Course #4						
Addressed?						
Tested or Assessed?						
Course #4						
Addressed?						
Tested or Assessed?						
[Etc]						



## *Some Prominent Assessment Approaches*

- Tests that include Carefully Designed “Constructed Response Tasks” that Assess both Discipline Content and Generic Skills
  - Capstone Courses and Projects in the Discipline that Also Demonstrate Generic as Well as Discipline Competencies
  - Portfolios of Student Work Organized Around Generic Competencies for the Degree
  - Assessments “Embedded” in Regular Assignments
- All of These Require a Way to Rate Student Work Consistently Across Teaching Staff





# Scoring Guides and Assignment Prompts

- Scoring Guides Array Multiple Criteria for Judging Student Constructed Responses (to an Assignment, Test Question, etc.) at Various Levels



## The Anatomy of a VALUE Rubric

Criteria

**INTEGRATIVE LEARNING VALUE RUBRIC**  
for more information, please contact rubric@aaaai.org

**Definition**  
Integrative learning is an understanding and a disposition that a student builds across the curriculum and cocurriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new and complex situations within and beyond the campus.  
*Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.*

	4 Capstone	3 Milestones	2	Benchmark 1
<b>Connections to Experience</b> <i>Connects relevant experiences and academic knowledge</i>	Meaningfully synthesizes connections among experiences outside of the formal classroom (including life experiences and academic experiences such as internships and travel abroad) to deepen understanding of fields of study and to broaden own points of view.	Effectively selects and develops examples of life experiences, drawn from a variety of contexts (e.g., family life, artistic participation, civic involvement, work experience), to illuminate concepts/theories/frameworks of fields of study.	Compares life experiences and academic knowledge to infer differences, as well as similarities, and acknowledge perspectives other than own.	Identifies connections between life experiences and those academic tests and ideas perceived as similar and related to own interests.
<b>Connections to Discipline</b> <i>See / makes) connections across disciplines, perspectives</i>	Independently creates wholes out of multiple parts (synthesizes) or draws conclusions by combining examples, facts, or theories from more than one field of study or perspective.	Independently connects examples, facts, or theories from more than one field of study or perspective.	When prompted, connects examples, facts, or theories from more than one field of study or perspective.	When prompted, presents examples, facts, or theories from more than one field of study or perspective.
<b>Transfer</b> <i>Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations</i>	Adapts and applies, independently skills, abilities, theories, or methodologies gained in one situation to new situations to solve difficult problems or explore complex issues in original ways.	Adapts and applies skills, abilities, theories, or methodologies gained in one situation to solve problems or issues.	Uses skills, abilities, theories, or methodologies gained in one situation in a new situation to contribute to understanding of problems or issues.	Uses, in a basic way, skills, abilities, theories, or methodologies gained in one situation in a new situation.
<b>Integrated Communication</b>	Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) in ways that are clear and meaningful, making clear the interdependence of language, content, and meaning, thought, and action.	Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) to explicitly connect content and form, demonstrating awareness of purpose and audience.	Fulfills the assignment(s) by choosing a format, language, or graph (or other visual representation) that connects in a basic way what is being communicated (content) with how it is said (form).	Fulfills the assignment(s) (i.e. to produce an essay, a poster, a video, a PowerPoint presentation, etc.) in an appropriate form.
<b>Reflection and Self-Assessment</b> <i>Demonstrates a developing sense of self as a learner, building on prior experiences in response to new and challenging contexts (may be evident in self-assessment, reflective, or creative work)</i>	Envisions a future and possibly makes plans for how to respond to new and challenging contexts.	Evaluates changes in own learning over time, recognizing complex contextual factors (e.g., works with ambiguity and risk, deals with frustration, considers ethical frameworks).	Articulates strengths and challenges (within specific performances or events) to increase effectiveness in different contexts (through increased self-awareness).	Describes own performances with general descriptors of success and failure.

Levels

Performance  
Descriptors



## *Scoring Guides and Assignment Prompts*

- Scoring Guides Array Multiple Criteria for Judging Student Constructed Responses (to an Assignment, Test Question, etc.) at Various Levels
- This Means that the Prompts (Assignments) that Generate these Student Responses Should Unavoidably Cause Students to Respond in a Way that Tries to Demonstrate Mastery of a Given Competency
- So Prompts Should Note the **Central Task** to be Undertaken, How the Answer Should be **Communicated**, What Kinds of **Evidence** Should be Used, and How **Extensive** the Response Should

## *Points About Assignment Templates*

- Basic Format: “Compare the Substance of [Argument X] with [Argument Y] by Means of a Written Essay [of Z Length] that Contains at Least Three Examples of Important Ways in Which these Arguments Differ”
- Should Address No More than Two or Three Competencies
- Should Combine DQP Competencies (which are broad and generic) with Subject Specific Competencies Tied to Course Content





## *Final Points*

- U.S. Institutions Increasingly Recognize that Curricula Need to be More **Purposeful** So Course Sequences **Fit Together** Better. Curricular Mapping and Learning Outcomes Assessment are Tools to Accomplish This Task
- The Objective of Both of These Activities is to Generate **Information that Can be Used to Improve Teaching and Learning**
- This is an Iterative Process and It Does Not Have to Be (and It Will Not Be) Perfect the First Time; The Point is to Start a Collective and Intentional **Conversation** About What is Working and What Can Be Improved

