

Assessing Writing and Critical Thinking Across the Curriculum

JESSICA DENNIS- INTERIM DIRECTOR
OF ASSESSMENT
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WORKSHOP OUTCOMES

- As a result of this workshop you will be able to:
 - Describe the features of critical thinking and written communication
 - Adopt a rubric and select assignments for the assessment of these skills
 - Develop a plan for data collection

THE ASSESSMENT CYCLE



DEFINING AND ASSESSING WRITTEN COMMUNICATION AND CRITICAL THINKING

WASC SENIOR COLLEGE AND UNIVERSITY COMMISSION (WSCUC)

- In the *2013 Handbook of Accreditation*, Criteria for Review 2.2a states:
 - Baccalaureate programs engage students in an integrated course of study of sufficient breadth and depth to prepare them for work, citizenship, and life-long learning. These programs ensure the development of core competencies including, but not limited to, **written and oral communication, quantitative reasoning, information literacy, and critical thinking.**
- Institutions are free to define each core competency in a way that makes sense for the institution, its mission, its values, and the needs of its student body.

INSTITUTIONAL LEARNING OUTCOMES AT CAL STATE LA

- ***Knowledge: Mastery of content and processes of inquiry***
 - CSULA graduates have a strong knowledge base in their academic major and can use powerful processes of inquiry in a range of disciplines. They engage contemporary and enduring questions with an understanding of the complexities of human cultures and the physical and natural world and are ready to put their knowledge into action to address contemporary issues.
- ***Proficiency: Intellectual skills***
 - CSULA graduates are equipped to actively participate in democratic society. They are **critical thinkers** who make use of **quantitative and qualitative reasoning**. They have the ability to **find, use, evaluate and process information** in order to engage in complex decision-making. They read critically, **speak and write** clearly and thoughtfully and communicate effectively.
- ***Place and Community: Urban and global mission***
 - CSULA graduates are engaged individuals who have contributed to the multi-lingual and multiethnic communities that constitute Los Angeles and the world of the future. They are aware of how their actions impact society and the environment, and they strive to make socially responsible decisions. They are community builders sensitive to the needs of diverse individuals and groups and committed to renewing the communities in which they live.
- ***Transformation: Integrative learning***
 - CSULA graduates integrate academic learning with life. They engage in community, professional, creative, research and scholarly projects that lead to changes in their sense of self and understanding of their worlds. Graduates integrate their knowledge, skills and experience to address complex and contemporary issues and act ethically as leaders for the 21st century.

ACTIVITY #1: WRITING AND CRITICAL THINKING

- What are the habits of mind that you most value in a writer you admire as a critical thinker?
 - List five intellectual traits.
- What habits or assumptions characterize a writer you distrust as a critical thinker?

WHAT IS WRITTEN COMMUNICATION?

- **WASC frames written communication as:**

- 1) Communication by means of written language for informational, persuasive, and expressive purposes.
- 2) Written communication may appear in many forms or genres.
- 3) Successful written communication depends of mastery of conventions, faculty with culturally accepted structures for presentation and argument, awareness of audience and other situation-specific factors.

WRITTEN COMMUNICATION RUBRIC DEVELOPED BY DIRECTOR OF WRITING ACROSS THE CURRICULUM

	Criteria for Capstone Proficiency
Analysis (Content)	Presents and fully supports a controlling thesis or topic in a clear, critical, and persuasive manner. Employs evidence beyond common or routine responses. Well-developed paragraphs foster a thorough examination of the topic.
Use of Information	Clearly, thoroughly and effectively develops and synthesizes information using well-chosen examples and evidence psychology and the writer's own knowledge or insights.
Organization	Employs and sustains an appropriate organizational strategy that is logical and easy to follow. Consistently effective transitions within and between paragraphs enhance and unify the argument.
Tone/Voice/Style	Effectively employs precise, vivid vocabulary, diction and tone that enhance the writing in accord with the situation. Retains an authorial, professional-sounding voice that demonstrates the writer is involved and engaged with the topic. Effectively employs varied sentence structures.
Conventions	Uses correct grammar, spelling, punctuation, and formatting, showing careful and effective revision and proofreading. Any remaining lapses in conventions do not undermine the writing.

WHAT IS CRITICAL THINKING?

- **WASC frames critical thinking as:**

- 1) The ability to think in a way that is clear, reasoned, reflective, informed by evidence, and aimed at deciding what to believe or do.

- 2) Dispositions supporting critical thinking include open-mindedness and motivation to seek the truth.

AAC&U VALUE RUBRIC FOR CRITICAL THINKING

	Criteria for Capstone Proficiency
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.
Evidence (selecting and using information to investigate a point of view or conclusion)	Information is taken from source(s) with enough interpretation/evaluation, to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order

4 Compelling Critical Thinking

The scorer finds the essay's argument compelling for a particular insight or sophistication of ideas; the analysis results in a justified judgment concerning actions or beliefs.

The writer demonstrates facility with both analysis (differentiation) and synthesis (integration) of ideas: distinctions and conclusions are specific and proportionate to their evidence.

The writer appreciates the complexity of the issue, respects competing perspectives, and responds with intellectual honesty and an original point of view.

The claims are contestable but advanced by discrete ideas, the supporting evidence is well chosen, and the reasoning linking evidence to ideas is consistently sound.

The prompt or genre may not enable a strong personal thesis, but the essay demonstrates a thoughtful synthesis in its treatment of ideas and evidence.

3 Clearly Competent Argumentation

The scorer encounters a cogent argument or analysis, capably constructed, perhaps with some idea or element deserving of praise.

The writer engages in both analysis and synthesis: ideas are presented in arguments that contribute to an integrated perspective. The thesis may be modest in ambition, but the essay develops a central idea, methodically if predictably.

The writer recognizes the complexity of the issue, acknowledges other perspectives, and advances an individual point of view.

There is an explicit structure of claims, supporting ideas, and evidence, with reasoned connections between them, though there may be questionable gaps in conclusions or evidence.

An essay may be comprehensive but plodding, or imaginative but incomplete, yet in each instance the writer demonstrates an awareness of the elements necessary to advance a logical argument.

2 Underdeveloped Analysis

The scorer encounters an essay that makes distinctions but does not integrate or synthesize ideas.

The writer demonstrates ability with analysis or synthesis but does not coordinate them: ideas may be sorted into paragraphs, or a claim may be advanced with evidence, but the essay lacks an organized structure of ideas.

The essay demonstrates facility with parts of an argument, but only parts: the paper might identify topics to be compared, or suggest original ideas, but fails to articulate their relationship to a particular point of view.

The writer may recognize the complexity of the issue or alternative perspectives, but does not address them sufficiently or appropriately.

The paper may lack a contestable claim, or fail to demonstrate the relationship between ideas and evidence, which might not be entirely relevant or sufficient.

1 Rudimentary Reasoning

The scorer may sense an argument, but it is never articulated; the essay contains occasional ideas but they never cohere to form distinct lines of argumentation or analysis.

The writer requires instruction in analysis and synthesis, in drawing clear distinctions and conclusions: similar ideas appear in different parts of the essay; unrelated ideas are grouped together; ideas and observations may be repeated.

The essay lacks skepticism toward received ideas, fails to define the context of the discourse, makes broad claims with scant evidence, or presumes unearned conclusions.

The writer does not recognize the complexity of the issue, consider other perspectives, or address them with intellectual integrity.

The limitation may be in the prompt, which requires no more than rudimentary reasoning, but the score should reflect the evidence of thinking on the page.

SHOULD THESE BE ASSESSED TOGETHER OR SEPARATELY?

The Case for Together

- Efficient
- Much of good writing involves critical thinking

The Case for Separately

- Students write for different purposes- not always critical thinking
- Critical thinking can be expressed in ways other than writing (especially oral communication)
- Programs can decide how to define and assess each skill!

CAL STATE LA'S RUBRIC FOR THE ASSESSMENT OF WRITTEN COMMUNICATION AND CRITICAL THINKING

6 - SUPERIOR: A paper receiving a score of 6 is distinguished by its thoughtfully and effectively developed content and by its rhetorical sophistication. A paper in this category typically

- is insightful, cogent, and perceptive, indicating that the writer has a very clear purpose and strong sense of audience.
- has a clearly focused, coherently developed main idea and is effectively organized.
- offers specific and convincing evidence, examples, and details, which are presented appropriately and effectively.
- exhibits superior control of language, including diction, phrasing, and syntactic variety.
- avoids errors in mechanics, grammar, and usage, although it may have a few minor flaws.

5 - STRONG: A paper receiving a score of 5 is solid in content and development and employs an effective, confident style, though it may be less thoughtful or sophisticated than the 6. A paper in this category typically

- goes beyond a routine response, exhibiting a clear purpose and sense of audience.
- has a well-focused main idea and a clear and appropriate organization.
- is fully developed using specific, convincing evidence, examples, and details.
- demonstrates strong control of language and a general facility with diction, phrasing, and sentence structure.
- may have minor flaws or occasional awkwardness, but it will be largely free of errors in mechanics, grammar, and usage.

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4-ADEQUATE: A paper receiving a score of 4 demonstrates **adequate** writing ability. It may be unremarkable in content, development, or style, but the writing is competent and sufficient to convey the writer's meaning. An essay in this category typically

- may indicate that the writer has a vague or uncertain sense of purpose or audience, which leads to a routine or simplistic approach to the task/topic/assignment.
- has a recognizable main idea and an apparent organization, however mechanical.
- uses some specific evidence to develop and clarify ideas.
- demonstrates basic competence in diction, phrasing, and sentence structure, although there may be some imprecision, clumsiness, and/or repetitiveness.
- has minor errors in mechanics, grammar, and usage, but these will be neither frequent nor serious enough to confuse or significantly distract the reader.

3 - DEVELOPING: A paper receiving a score of 3 is marked by significant weaknesses in content, development, or expression that may impair the writer's ability to generate and convey ideas clearly and effectively. An essay in this category typically has one or more of the following weaknesses: It may

- indicate that the writer has a confused or uncertain sense of purpose or audience, which leads to a vague, unfocused, or inconsistent approach to the task/topic/assignment.
- be unclearly or incoherently organized or logically flawed.
- lack sufficient evidence to clarify or develop ideas.
- be uncertain or confusing in diction, phrasing, and sentence structure.
- have errors in mechanics, grammar, and usage that are frequent or serious enough to distract or confuse the reader.

CAL STATE LA'S RUBRIC FOR THE ASSESSMENT OF WRITTEN COMMUNICATION AND CRITICAL THINKING

2 -NOT PROFICIENT: A paper receiving a score of 2 is marked by weaknesses in both development and expression that severely limit the writer's ability to develop and communicate ideas. An essay in this category typically has several of the following weaknesses: it may

- have no clear purpose, focus, or awareness of audience.
- have obvious and significant flaws in organization and/or logic.
- lack specific evidence, or the evidence offered is largely irrelevant.
- lack control of diction, phrasing, and sentence structure.
- have such frequent and serious errors in mechanics, grammar, and usage that the writing is largely incoherent and meaning is nearly lost.

1 - UNACCEPTABLE: A paper receiving a score of 1 represents an unacceptable approach to/treatment of the assignment: it may be inappropriate in content, tone, or genre; it may have completely misconstrued the topic; or it may appear to be largely patchwritten from other texts

USING AND MODIFYING RUBRICS TO MEET YOUR NEEDS

- **Decide on minimum criteria for proficiency.**
- **VALUE rubrics use this terminology:**
 - **Capstone**- culminating level of achievement expected for baccalaureate degree
 - **Milestones**- progressively more sophisticated performance
 - *Not* intended for 1 = freshmen, 2 = sophomore, or 4 = A, 3 = B, etc.

MODIFYING RUBRICS

- Meant to be modified!
- Add more specific criteria based on your program or assignment
- Add new dimensions to reflect issues important to your program

Figure 8. Modification of the VALUE rubric for civic engagement (tracked changes show relabeling of criteria, combination of two criteria, and additional changes to reflect campus context)

	CAPSTONE 4	MILESTONE 3	MILESTONE 2	BENCHMARK 1
<u>Civic Literacy (Knowledge)</u>	<u>Connects and extends knowledge (facts, theories, etc.) of civic contexts, structures and systems within one's own academic study/field/discipline and beyond (multidisciplinary)</u>	<u>Analyzes knowledge (facts, theories, etc.) of civic contexts, structures and systems by making relevant connections to one's own academic study/field/discipline.</u>	<u>Begins to connect knowledge (facts, theories, etc.) of civic contexts, structures and systems to one's own academic study/field/discipline.</u>	<u>Begins to identify knowledge (facts, theories, etc.) of civic contexts, structures and systems.</u>
Analysis of Knowledge	Connects and extends knowledge (facts, theories, etc.) from one's own academic study/field/discipline to civic engagement and to one's own participation in civic life, politics, and government.	Analyzes knowledge (facts, theories, etc.) from one's own academic study/field/discipline by making relevant connections to civic engagement and to one's own participation in civic life, politics, and government.	Begins to connect knowledge (facts, theories, etc.) to civic engagement and to one's own participation in civic life, politics, and government.	Begins to identify knowledge (facts, theories, etc.) from one's own academic study/field/discipline that is relevant to civic engagement and to one's own participation in civic life, politics, and government.
Civic Communication and Skills	Tailors communication strategies, <u>participation and advocacy skills</u> and advocacy skills to effectively express, listen, and adapt to others to establish relationships to further civic action	Effectively communicates, <u>participates and advocates</u> in civic context, showing ability to do all of the following: express, listen, and adapt ideas and messages based on others' perspectives.	Communicates, <u>participates and advocates</u> in civic context, showing ability to do more than one of the following: express, listen, and adapt ideas and messages based on others' perspectives.	Communicates, <u>participates and advocates</u> in civic context, showing ability to do one of the following: express, listen, and adapt ideas and messages based on others' perspectives.
<u>Civic Responsibility (Values)</u>	<u>Demonstrates ability and commitment to collaboratively work across and within community contexts and structures to achieve a civic aim.</u>	<u>Demonstrates ability and commitment to work actively within community contexts and structures to achieve a civic aim.</u>	<u>Demonstrates experience identifying intentional ways to actively participate in civic contexts and structures.</u>	<u>Demonstrates a willingness for passive but not active participation in civic context and structures.</u>

ACTIVITY #2: RUBRICS

- How does your program conceptualize written communication and critical thinking?
- What are the strengths or weaknesses of the various rubric options?

SELECTING ARTIFACTS

ASSIGNMENT OPTIONS

- Written assignments currently used in courses:
 - Brief reflective and analytical writing
 - Term papers
 - Thesis papers or capstone projects
- Signature assignment that can be used in multiple courses to compare students of different levels
- Portfolios representing a variety of papers

WHAT IS A SIGNATURE ASSIGNMENT?

- Embedded in a course
- Used for course grade and program assessment
- Aligned with Program Learning Outcomes
- Collaboratively designed by faculty
- Meaningful and integrative

- Why?
 - Allows a program to assess learning across course sections or instructors
 - Creates consistency
 - Useful for assessing course sections with different modalities/pedagogies

PROMPTS THAT INVITE CRITICAL THINKING

- Engage questions of genuine uncertainty
- Involve values and their application to conflicts
- Require judgments among conflicting perspectives and assessments of relative costs and benefits
- Consider the world as it is and as it might be
- Imply consequences – they may lead to proposed actions or solutions

ASSIGNMENTS TO INVITE CRITICAL THINKING

Example 1: Responding to Provocative Statements

“At the heart of Western democracy is the belief that the individual man, the child of God, is the touchstone of value, and all society, all groups and states exist for that person's benefit. Therefore, the enlargement of liberty for individual human beings must be the supreme goal of any Western society.” -- Robert F. Kennedy

Assuming the idea presented above applies equally to men and women, do you agree with this assertion? For what new reasons do you agree or disagree, and what evidence can you provide to support your point of view?

From Fliegel, J., & Holland, R. (2016, October). *Using assessment to improve instruction in critical thinking*. Presentation at the WASC Senior College and University Commission: 5 Core Competencies Workshop in Pomona, CA.

ASSIGNMENTS TO INVITE CRITICAL THINKING

Example 2: Drawing on Coursework

Democracy depends significantly upon the ability of the general public to exercise judicious reasoning with regard to important social and political questions. Although public reasoning can never be expected to reflect the depth, rigor, or sophistication that expert reasoning achieves through its concentration on narrow questions, the public understanding of social issues must attain to a sound reasonableness sufficient to the challenges imposed.

Evaluate the quality of public reasoning directed toward the social issues you have studied this semester in your general education and writing classes.

From Fliegal, J., & Holland, R. (2016, October). *Using assessment to improve instruction in critical thinking*. Presentation at the WASC Senior College and University Commission: 5 Core Competencies Workshop in Pomona, CA.

ASSIGNMENTS TO INVITE CRITICAL THINKING

- Example 3: Writing for Professional Aspirations

Your professional organization (such as the American Medical Association or the American Nurses Association) issues a call for papers for a forthcoming conference on public perceptions of your discipline. They seek careful and cogent analyses that respond to the following questions:

- What public perception do you consider most inaccurate and damaging?
- What are the sources of that impression?
- What impact does it have on the profession?
- How should the professional community respond to this public perception?

From Fliegal, J., & Holland, R. (2016, October). *Using assessment to improve instruction in critical thinking*. Presentation at the WASC Senior College and University Commission: 5 Core Competencies Workshop in Pomona, CA.

ASSIGNMENT CONSIDERATIONS

- What is the ideal length or range?
- Should revision be required?
- What is the purpose or intended audience?

ACTIVITY #3: CHOOSING WRITING AND CRITICAL THINKING ARTIFACTS

- Think about the habits of mind you listed earlier in activity #1. How can these be used to develop prompts that elicit critical thinking that measure it in your program?
- What written assignments are already used in courses in your program? Can these be used or adapted as part of your assessment plan?

DEVELOPING YOUR PLAN OF ACTION

WHERE ARE THESE OUTCOMES TAUGHT IN YOUR CURRICULUM?

	1500	2000	3020	3040	3080	3100	3220	3230	4110	4120	4250	4650
PLO1	I		D		D	D			D	D	M	M
PLO2		I	D						D			M
PLO3		I			D			D				
Written Com	I	D		D	D	D	D	D		D	M	M
PLO5		I		D	D							M
PLO6		I		D								
Critical Thinking	I		D			D			M			M

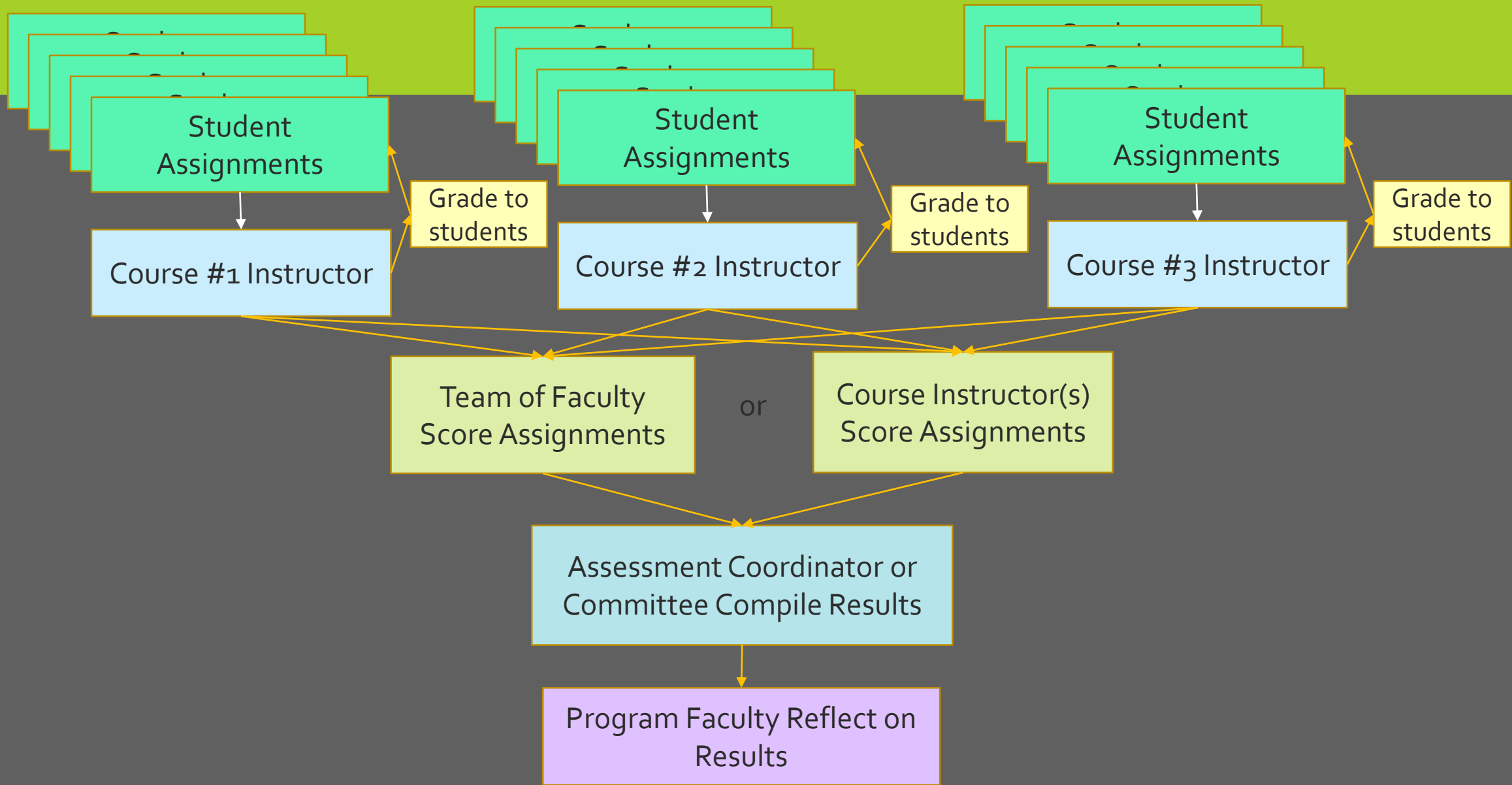
I = Introduced; D = Developed/Reinforced; M = Mastered

CHOOSING COURSES FOR YOUR ASSESSMENT PLAN

	1500	2000	3020	3040	3080	3100	3220	3230	4110	4120	4250	4650
PLO1	I		D		D	D			D	D	M	M
PLO2		I	D						D			M
PLO3		I			D			D				
Written Com	I	D		D	D	D	D	D		D	M	M
PLO5		I		D	D							M
PLO6		I		D								
Critical Thinking	I		D			D			M			M

I = Introduced; D = Developed/Reinforced; M = Mastered

GATHER AND EVALUATE



SCORING ASSIGNMENTS: RUBRIC CALIBRATION

- Hold a calibration session with all instructors or faculty scorers.
- Begin with a close reading of the rubric and identify areas of discussion.
- Faculty should come to an agreement on interpretation of language in rubric.
- Faculty are given an example of student work to score.
- Discuss scores row by row. Faculty provide rationale for their scores and try to reach consensus.
- Goal is to identify two scores around with the majority cluster.
- Repeat with more examples of student work (high, low, medium)

DOS AND DON'TS OF DATA COLLECTION AND ANALYSIS

DO

- Form a department assessment committee charged with regularly collecting and disseminating data
- Ask for faculty volunteers
- Give faculty early notice regarding assessment plans
- Disaggregate results across time, populations, and outcomes
- Protect the confidentiality and anonymity of students and faculty by examining results at the group level
- Use results to inform changes

DON'T

- Wait until the last minute
- Pressure faculty to comply with assessment activities
- Use assessment results to call attention to, judge, or punish individual faculty or students
- Expect perfection
- Collect more data than you can use

USING RESULTS TO CREATE A CULTURE OF EVIDENCE

- Use results:
 - To examine skill development across the curriculum
 - To examine curriculum content coverage and areas for program modification
 - To improve instruction and introduce new pedagogies
 - Contact CETL for resources and support
 - To improve and refine your assessment process/methods

CONNECTING TO INSTITUTIONAL ASSESSMENT PROJECTS

WRITTEN COMMUNICATION PILOT PROJECT 2018

- Papers collected from in 11 classes in Spring 2018
- $N = 135$ papers scored
- 6-10 were randomly selected from each course
- College and Courses:
 - 33 from A&L (ENGL 1005B, WGSS 4665)
 - 8 from B&E (BUS 3050)
 - 8 from CCOE (COUN 3010)
 - 6 from ECST (CE 3060)
 - 31 from HHS (CHDV 4960, PH 4160)
 - 49 from NSS (GEOL 4220, HIST 4900, LAS 3500, SOC 3190, SOC 4120).

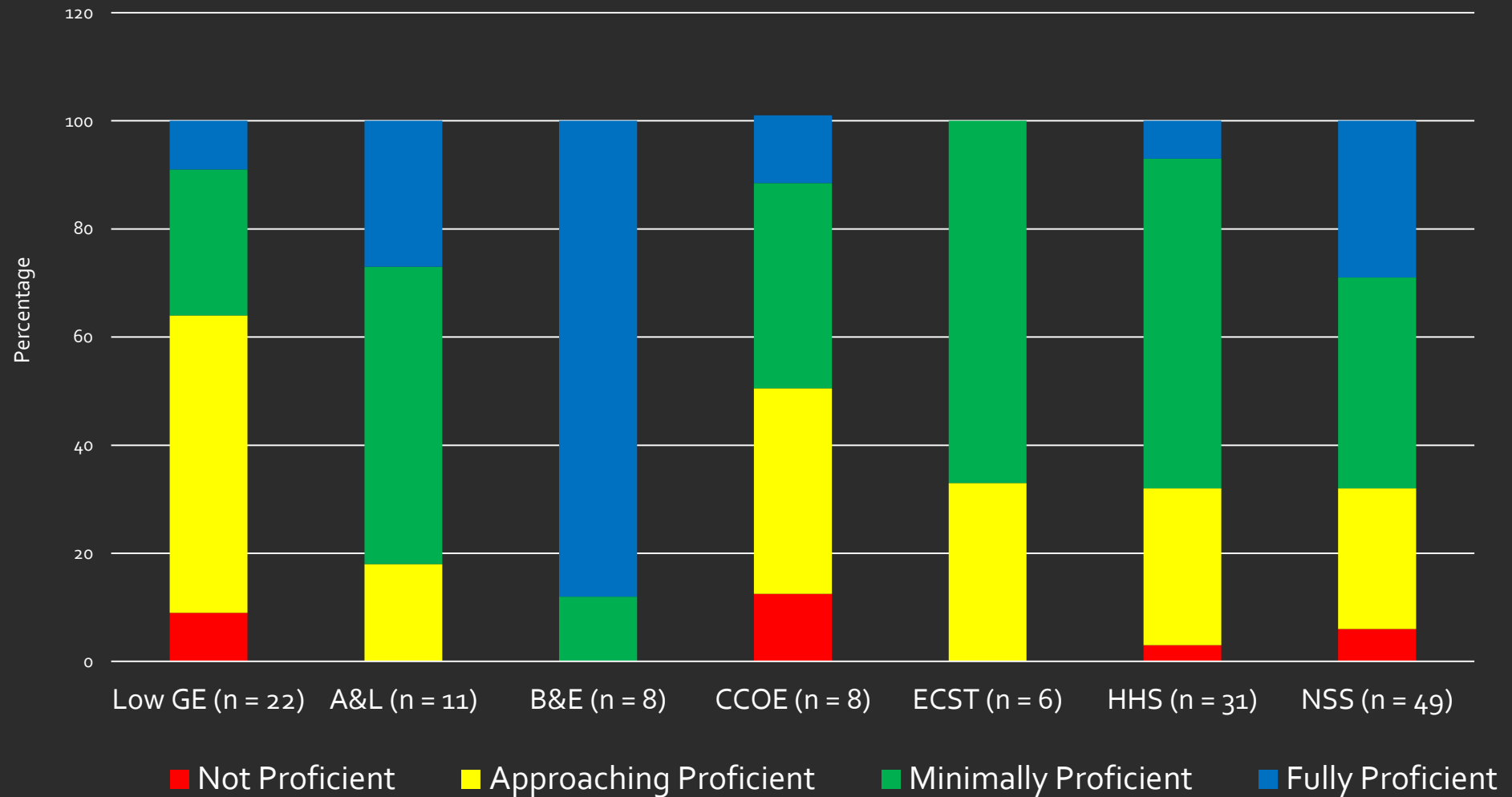
DATA COLLECTION AND SCORING

- Papers included:
 - Career or industry analysis (BUS 3050)
 - Engineering project summary (CE 3050)
 - Research literature synthesis (CHDV4960, COUN 3010, LAS 3500, SOC 3910)
 - Social critique/analysis of film or literature (ENGL 1005B, HIST 4900, WGSS 3665)
 - Empirical research report (GEOL 4220, PH 4120, SOC 4120)
- 5 faculty scored presentations using a rubric developed for stretch English

PERCENTAGE SCORING PROFICIENT OR HIGHER BY COURSE

Course	Analysis	Use of Information	Organization	Tone	Conventions
BUS 3050 (n = 9)	100%	100%	100%	100%	100%
CE 3060 (n = 6)	66.7%	33.3%	33.4%	16.7%	33.3%
CHDV 4960 (n = 14)	71.5%	71.5%	50%	63.3%	78.5%
COUN 3010 (n = 8)	50%	50%	37.5%	50%	50%
ENGL 1005B (n = 22)	36.4%	31.8%	31.8%	45.4%	45.5%
GEOG 4220 (n = 10)	80%	100%	80%	80%	80%
HIST 4900 (n = 7)	71.5%	71.5%	71.5%	85.7%	85.7%
LAS 3350 (n = 8)	50%	37.5%	37.5%	37.5%	62.5%
PH 4160 (n = 17)	64.7%	58.8%	52.9%	52.9%	53%
SOC 3910 (n = 15)	73.3%	40%	46.7%	46.7%	46.7%
SOC 4120 (n = 9)	55.5%	44.4%	55.5%	55.5%	55.5%
WGSS 3665 (n = 11)	81.8%	62.8%	91.9%	63.7%	63.7%

Spring 2018 Written Communication Assessment: Analysis/Content by College



INSTITUTIONAL ASSESSMENT PLAN FOR 2018-2019

- Collect evidence of written communication and critical thinking at the GE, upper division, and graduate levels.
- Promote the use of a common rubric across programs so that some results could be aggregated or compared.
 - Participation in group norming sessions
- Report will also include examples of programs that use different rubrics or approaches.

ACTIVITY #3: ASSESSMENT PLAN

- What assignment or activity will you use?
- How will you score student achievement?
- What classes would you target for sampling and when?
- Which faculty will be responsible for coordinating data collection? Data analysis?
- How will you analyze the results? Will you disaggregate results in some way?
- How will results be shared, discussed, and used to make changes?

NEXT STEPS

- Develop a signature assignment or select assignments
- Create a plan of action for data collection
- Faculty scorers would participate in a norming session in the spring for using a shared rubric

RESOURCES AND CREDITS

Cal State LA Assessment Resources website:

- <http://www.calstatela.edu/apra/assessment-resources>
- Credits:
- *"Using assessment to improve instruction in critical thinking"* Presentation slides by Fliegal, J., & Holland, R. at the 2016 WASC Senior College and University Commission: 5 Core Competencies Workshop in Pomona, CA.
- *"Using the VALUE Rubrics for Improvement of Learning and Authentic Assessment"* by Rhodes & Finley (2013) Association of American Colleges and Universities
- *"Using Signature Assignments for Program-Level Assessment"* Presentation Slides by University of Hawaii, Manoa
- University of Texas signature assignments webpage:
 - <https://ugs.utexas.edu/sig/plan/samples/writing-model4>