Rubrics as an Instructional Strategy - Designing a Freshman A+CE Signature Assignment and Grading Rubric

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Rubrics as an Instructional Strategy

1. Alignment of assignment and rubric
2. Rubrics as an instructional tool

Background

- A^{+}CE-designated UHD 1303 (life & physical sciences) Freshman Seminar
  - Biology of Food, Biology of Women, Strangers Among Us: The Human Microbiome
- Require a critical thinking *Signature Assignment;* submitted student artifacts will be assessed with the AACU Value Rubric

Alignment of assignment and rubric

CRITICAL THINKING PART 2: INQUIRY & ANALYSIS VALUE RUBRIC

Based upon the AAC&U Creative Thinking and Inquiry & Analysis VALUE rubrics: http://www.aacu.org/value/rubrics/creative-thinking and http://www.aacu.org/value/rubrics/inquiry-analysis

Definition: The THECB defines critical thinking as: creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
Foundation Component Areas Where Critical Thinking is Taught: All courses in the core

	Mastery (Senior Level) *Point-value: 4*	*Proficient (Junior Level)* *Point-value: 3*	*Developing (Sophomore Level)* *Point-value: 2*	*Basic (Freshman Level)* *Point-value: 1*	*Skill is evident but performance falls below Freshman Level* *Point-value: 0*	*No Evidence: Assignment may not elicit skill or student failed to articulate.*
Topic selection	Identifies a creative, focused, and manageable topic that addresses potentially significant yet previously less-explored aspects of the topic.	Identifies a focused and manageable/doable topic that appropriately addresses relevant aspects of the topic.	Identifies a topic that while manageable/doable, is too narrowly focused and leaves out relevant aspects of the topic.	Identifies a topic that is far too general and wide-ranging as to be manageable and doable.	Unclear what the topic actually is. Topic may appear to shift over the course of the student's work.	
Existing Knowledge, Research, and/or Views	Synthesizes in-depth information from relevant sources representing various points of view/approaches.	Presents in-depth information from relevant sources representing various points of view/approaches.	Presents information from relevant sources representing limited points of view/approaches.	Presents information from irrelevant sources representing limited points of view/approaches.	Appears to be including a set number of sources because the assignment stipulated a minimum. Sources do not advance the understanding of the topic.	
Design Process	All elements of the methodology or theoretical framework are skillfully developed. Appropriate methodology or theoretical frameworks may be synthesized from across disciplines or from relevant subdisciplines.	Critical elements of the methodology or theoretical framework are appropriately developed, however, more subtle elements are ignored or unaccounted for.	Critical elements of the methodology or theoretical framework are missing, incorrectly developed, or unfocused.	Inquiry design demonstrates a misunderstanding of the methodology or theoretical framework.	Unable to determine if the student understands the methodology or theoretical framework.	
Analysis	Organizes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to focus.	Organizes evidence to reveal important patterns, differences, or similarities related to focus.	Organizes evidence, but the organization is not effective in revealing important patterns, differences, or similarities.	Lists evidence, but it is not organized and/or is unrelated to focus.		
Conclusions	States a conclusion that is a logical extrapolation from the inquiry findings.	States a conclusion focused solely on the inquiry findings. The conclusion arises specifically from and responds specifically to the inquiry findings.	States a general conclusion that, because it is so general, also applies beyond the scope of the inquiry findings.	States an ambiguous, illogical, or unsupportable conclusion from inquiry findings.	Student does not articulate a conclusion.	
Limitations and Implications	Insightfully discusses in detail relevant and supported limitations and implications.	Discusses relevant and supported limitations and implications.	Presents relevant and supported limitations and implications.	Presents limitations and implications, but they are possibly irrelevant and unsupported.		

SLO 1: Students will be able to analyze community issues with respect to different perspectives, theories, or solutions.

Alignment of assignment and rubric

CRITICAL THINKING PART 1: CREATIVE THINKING VALUE RUBRIC

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Acquiring Competencies *This step refers to acquiring strategies and skills within a particular domain.*	Reflect: Evaluates creative process and product using domain-appropriate criteria.	Create: Creates an entirely new object, solution or idea that is appropriate to the domain.	Adapt: Successfully adapts an appropriate exemplar to his/her own specifications.	Model: Successfully reproduces an appropriate exemplar.	Unable to successfully reproduce an appropriate exemplar.	
Taking Risks *May include personal risk (fear of embarrassment or rejection) or risk of failure in successfully completing assignment, i.e. going beyond original parameters of assignment, introducing new materials and forms, tackling controversial topics, advocating unpopular ideas or solutions.*	Actively seeks out and follows through on untested and potentially risky directions or approaches to the assignment in the final product.	Incorporates new directions or approaches to the assignment in the final product.	Considers new directions or approaches without going beyond the guidelines of the assignment.	Stays strictly within the guidelines of the assignment.	Fails to follow the intent of the assignment, critical pieces are missing.	
Solving Problems	Not only develops a logical, consistent plan to solve problem, but recognizes consequences of solution and can articulate reason for choosing solution.	Having selected from among alternatives, develops a logical, consistent plan to solve the problem.	Considers and rejects less acceptable approaches to solving problem.	Only a single approach is considered and is used to solve the problem.	Is unable to articulate a single, cohesive approach to solving a problem.	
Embracing Contradictions	Integrates alternate, divergent, or contradictory perspectives or ideas fully.	Incorporates alternate, divergent, or contradictory perspectives or ideas in a exploratory way.	Includes (recognizes the value of) alternate, divergent, or contradictory perspectives or ideas in a small way.	Acknowledges (mentions in passing) alternate, divergent, or contradictory perspectives or ideas.	Fails to mention alternative, divergent or contradictory perspectives or ideas	
Innovative Thinking *Novelty or uniqueness (of idea, claim, question, form, etc.).*	Extends a novel or unique idea, question, format, or product to create new knowledge or knowledge that crosses boundaries.	Creates a novel or unique idea, question, format, or product.	Experiments with creating a novel or unique idea, question, format, or product.	Reformulates a collection of available ideas.	Parrots a collection of available ideas in the format originally presented either from lectures or other sources.	
Connecting, Synthesizing, Transforming	Transforms ideas or solutions into entirely new forms.	Synthesizes ideas/solutions into a coherent whole.	Connects ideas or solutions in novel ways.	Recognizes existing connections among ideas or solutions.	Articulates incorrect or illogical connections among ideas or solutions.	

SLO 2: Students will be able to identify or design creative strategies to address an aspect of a community issue.

Alignment of assignment and rubric

Major projects/themes for the Signature Assignment in UHD 1303:

- Research breast cancer
- Research societal challenges associated with modern agricultural systems
- Research and then explain the accurate science behind a commonly held, but scientifically incorrect, belief about the course topic.

Alignment of assignment and rubric

Rubric	Assignment
Acquiring Competencies *This step refers to acquiring strategies and skills within a particular domain.*	What is the issue regarding…
Taking Risks *May include personal risk (fear of embarrassment or rejection) or risk of failure in successfully completing assignment, i.e. going beyond original parameters of assignment, introducing new materials and forms, tackling controversial topics, advocating unpopular ideas or solutions.*	What are the reasons that people believe and spread information that is not scientifically sound?
Solving Problems	How did you seek and research….
Embracing Contradictions	Compare and contrast divergent ideas…
Innovative Thinking *Novelty or uniqueness (of idea, claim, question, form, etc.).*	Describe your novel method to promote…
Connecting, Synthesizing, Transforming	Explain the role of inaccurate science in our society.

Rubrics as an Instructional Strategy

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Rubrics as an instructional tool

Give rubric to students ahead of time:

- Supports self-evaluation
- Creates self-directed learners

Rubrics as an instructional tool

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Acquiring Competencies *This step refers to acquiring strategies and skills within a particular domain.*	Reflect: Evaluates creative process and product using domain-appropriate criteria.	Create: Creates an entirely new object, solution or idea that is appropriate to the domain.	Adapt: Successfully adapts an appropriate exemplar to his/her own specifications.	Model: Successfully reproduces an appropriate exemplar.	Unable to successfully reproduce an appropriate exemplar.	
Taking Risks *May include personal risk (fear of embarrassment or rejection) or risk of failure in successfully completing assignment, i.e. going beyond original parameters of assignment, introducing new materials and forms, tackling controversial topics, advocating unpopular ideas or solutions.*	Actively seeks out and follows through on untested and potentially risky directions or approaches to the assignment in the final product.	Incorporates new directions or approaches to the assignment in the final product.	Considers new directions or approaches without going beyond the guidelines of the assignment.	Stays strictly within the guidelines of the assignment.	Fails to follow the intent of the assignment, critical pieces are missing.	
Solving Problems	Not only develops a logical, consistent plan to solve problem, but recognizes consequences of solution and can articulate reason for choosing solution.	Having selected from among alternatives, develops a logical, consistent plan to solve the problem.	Considers and rejects less acceptable approaches to solving problem.	Only a single approach is considered and is used to solve the problem.	Is unable to articulate a single, cohesive approach to solving a problem.	
Embracing Contradictions	Integrates alternate, divergent, or contradictory perspectives or ideas fully.	Incorporates alternate, divergent, or contradictory perspectives or ideas in a exploratory way.	Includes (recognizes the value of) alternate, divergent, or contradictory perspectives or ideas in a small way.	Acknowledges (mentions in passing) alternate, divergent, or contradictory perspectives or ideas.	Fails to mention alternative, divergent or contradictory perspectives or ideas	
Innovative Thinking *Novelty or uniqueness (of idea, claim, question, form, etc.).*	Extends a novel or unique idea, question, format, or product to create new knowledge or knowledge that crosses boundaries.	Creates a novel or unique idea, question, format, or product.	Experiments with creating a novel or unique idea, question, format, or product.	Reformulates a collection of available ideas.	Parrots a collection of available ideas in the format originally presented either from lectures or other sources.	
Connecting, Synthesizing, Transforming	Transforms ideas or solutions into entirely new forms.	Synthesizes ideas/solutions into a coherent whole.	Connects ideas or solutions in novel ways.	Recognizes existing connections among ideas or solutions.	Articulates incorrect or illogical connections among ideas or solutions.	

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Rubrics as an instructional tool

Acquiring Competencies
This step refers to acquiring strategies and skills within a particular domain.

Taking Risks
May include personal risk (fear of embarrassment or rejection) or risk of failure in successfully completing assignment, i.e. going beyond original parameters of assignment, introducing new materials and forms, tackling controversial topics, advocating unpopular ideas or solutions.

Solving Problems

Embracing Contradictions

Innovative Thinking
Novelty or uniqueness (of idea, claim, question, form, etc.).

Connecting, Synthesizing, Transforming

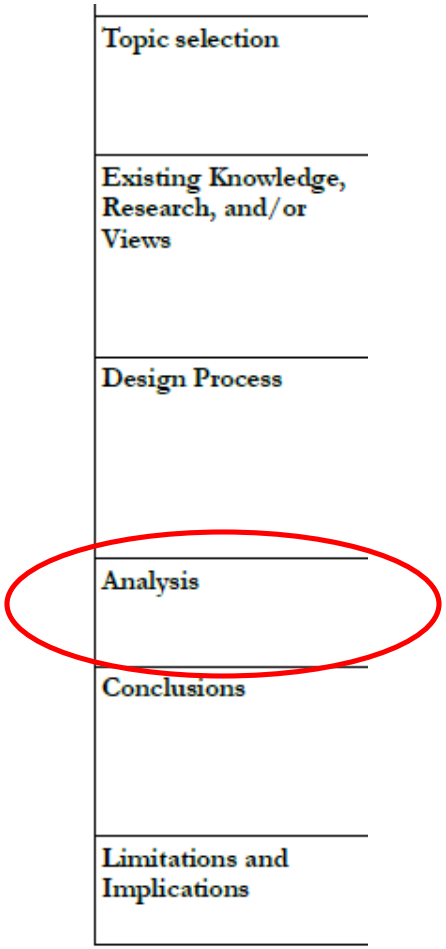
	Excellent (94-100% of points possible)	Satisfactory-Good (80-94% of points possible)	Poor to Satisfactory (60-79% of points possible)	Unacceptable/ no response (0-59% of points possible)
Acquiring Competencies	Successfully identifies the problem, gives an example, and an illustration. Answer is especially well-developed.	Successfully identifies the problem, gives an example, and an illustration.	Successfully identifies the problem and gives an example; answer is not well developed.	Unable to identify the issue and give an example.
16 points total	16 points	13-15 points	9.5-12.5 points	0-9 points
Taking Risks for delivery/Controversy	Discusses controversy in depth and advocates unpopular ideas	Identifies that a controversy exists	Basic answer to question	Fails to give reasons
16 points total	16 points	13-15 points	9.5-12.5 points	0-9 points
Solving Problems	Discusses multiple approaches to solving the problem develops a logical plan.	Discusses approaches that were considered, then rejected	Single approach to solving the problem	Does not address how the myth was found
16 points total	16 points	13-15 points	9.5-12.5 points	0-9 points
Embracing Contradictions	Explains in depth the value of divergent ideas.	Address the basics of the values of divergent ideas.	Acknowledges that divergent ideas exist.	Fails to discuss the divergent ideas.
16 points total	16 points	13-15 points	9.5-12.5 points	0-9 points
Innovative Thinking	Creates a new way to share the blog.	Novel sharing of blog.	Basic share of blog with no innovation.	Blog is not shared or is not addressed in essay.
16 points total	16 points	13-15 points	9.5-12.5 points	0-9 points
Connecting, Synthesizing, Transforming	Connects the role of the myth to the perpetuation of inaccurate information outside of the field of science.	Connects the role of the myth to a misunderstanding of science in society.	Recognizes a basic role for the myth in society.	Does not explain the role of your myth in society.
20 points total	20 points	16-19 points	12-15.5 points	0-11 points

Rubrics as an instructional tool

- Synthesizes ideas/solutions into a coherent whole. ⟶ Connects the role of the myth to the perpetuation of inaccurate information outside the field of science.

- Articulates incorrect or illogical connections among ideas or solutions. ⟶ Does not explain the role of the myth in society.

Rubrics as an instructional tool



Grading areas		Excellent answer resulting in a majority of the points (90-100%)	Satisfactory answer resulting in 60-89% of points	Poor answer resulting in a major loss of points (0-59%)
1	Topic Selection 5 points	Identifies a topic that is manageable and doable for the scope of the question or project 4.5- 5 points	Identifies a topic that is too general and wide-ranging as to be manageable or doable for the scope of the question or project 3- <4.5 points	Unclear what the topic actually is. Topic may appear to shift over the course of the student's work 0-<3 points
2	Existing Knowledge, Research, and/or Views 15 points	Presents information from relevant sources with relevant approaches/views 13.5-15 points	Presents information from marginally relevant sources or representing limited views/approaches 9-<13.5 points	No references or references are irrelevant 0-< 9 points
3	Design Process 10 points	Basics of a methodology or theoretical framework are present 9-10 points	Misunderstanding of methodology or theoretical framework needed 6-<9 points	Unable to determine if the student understands the methodology or theoretical framework 0-<6 points
4	Analysis 10 points	Organizes evidence to reveal basic similarities or differences or patterns 9-10 points	Some organization of evidence but the organization is not effective in revealing important patterns, differences or similarities 6-<9 points	Evidence is not presented or organized poorly so that difference, similarities or patterns are not determined 0-<6 points
5	Conclusions 5 points	States a general and relevant conclusion for the question or problem 4.5- 5 points	States an ambiguous, illogical or unsupportable conclusion from the inquiry findings 3- <4.5 points	There is no conclusion even when prompted to give one 0-<3 points
6	Limitations and implications 5 points	Presents relevant and supported limitation and implications for question or problem 4.5- 5 points	Presents limitations and implications, but they are irrelevant or unsupported 3- <4.5 points	Does not present any limitation or implications for the question or problem even when prompted to do so 0-<3 points

Rubrics as an instructional tool

- Organizes evidence to reveal important patterns, differences, or similarities related to focus. ⟶ Organizes evidence to reveal basic similarities or differences or patterns.

- Lists evidence, but it is not organized and/or is unrelated to focus. ⟶ Evidence is not presented or organized poorly so that difference, similarities or patterns are not determined

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- Simplified rubrics will be shared with other faculty members through the Center for Teaching and Learning Excellence.