



Assessments, Alignment, Evaluation, Oh my! The Path to Creating and Evaluating Assessments

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Activity (5 min.)

Brainstorm what characteristics/elements make for high-quality assessments.

- Describe the assessment to the people around you.
- What made the assessment a success from your perspective or the students' perspective?



Characteristics

1. Alignment
2. Usability
3. Cognitive Complexity (Rigor)
4. Authenticity
5. Fairness
6. Consistency
7. Fitness for Self Assessment
8. Transparency

Ranking



Characteristics

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Featured Faculty



Jeff Baggett
Data Science



Brenda Tyczkowski
Health Information
Management &
Technology



Rich Freese
Independent
Learning



Jesse Gant
Independent
Learning

Unscientific Survey



We need to know what we are going to build in order to know if we've built it correctly.



Characteristic #1: Alignment



Align assessments with curriculum (goals) and content.





What is the Backward Design model?



Goals

Evidence

Design

What do you want your students to know or be able to do? Specificity helps (e.g., Blooms verb).

What activities, assignments, and assessments will provide you the evidence you need to evaluate if they have met the goal?

What learning resources or instructional strategies are necessary to prepare the student?

Characteristic #1: Alignment Example



Goals

Evidence

Design

- **Analyze** data and questions to determine appropriate statistical procedures.
- **Implement** numerous statistical procedures using software and interpret the output.

Project: Predicting Loan Defaults with Logistic Regression

Part 1

- Clean, prepare, and explore loan data
- Create a logistic regression model and use it to predict loan status

Part 2

- Improve your model and diagnostics

- Provides examples of reports
- Videos, readings, and homework germane to the goals

The Logistic Regression Model

$$\ln\left(\frac{P(y=1)}{1-P(y=1)}\right) = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_kx_k$$

$y = 1$ if the event of interest occurs; $y = 0$ otherwise

Have you designed curriculum using the
Backward Design Method?

Characteristic #3: Cognitive Complexity (Rigor)

Create tasks that require higher cognitive skills.

- Elicit thinking process used by experts.



Characteristic #3: Cognitive Complexity (Rigor) Example

List the seven steps in the personal selling process.

Characteristic #3: Cognitive Complexity (Rigor) Example



Characteristic #3: Cognitive Complexity (Rigor) Example

Describe:

- a. three mistakes new salespeople commonly make during the first three steps of the seven-step sale process
- b. how these mistakes affect later stages

7 steps + common mistakes + interdependencies

Characteristic #3: Cognitive Complexity (Rigor) Example

Data Science

-There isn't a single right answer.

“There are many choices to make in building a predictive model and we'll be looking to see how well you've explained your choices as well as how you've analyzed the impact of those choices.”

What are some other ways you promote cognitive complexity (rigor)?

Unfortunately, alignment and cognitive complexity alone don't make for great assessments.

Goal: Build a house.



The assessment
aligns with the goal.



It exhibits significant cognitive complexity.



But is it realistic?



Characteristic #4: Authenticity

Maintain a degree of resemblance to “real life.”

- Create tasks that resemble authentic learning tasks in a new situation and are connected to prior knowledge.
- Create a physical or virtual context that mimics professional practice, provides a realistic amount of resources, includes both relevant and irrelevant information, and allows a realistic amount of time.
- Focus on an authentic result that involves presenting ideas and/or creating artifacts.
- Base evaluation on authentic criteria used in professional practice.

Characteristic #4: Authenticity Examples

Data Science

“The narrative should be written so that someone with a similar statistical background, but no knowledge of this particular project, could read along and reconstruct your analysis.”



Characteristic #4: Authenticity Examples

Health Information Management and Technology (HIMT)

GI Case Study Overview

Objectives

- 1. Locate and interpret current evidence related to the topic
- 2. Consider how information and technology are used in the workplace from the health care perspective in relation to the health information management system
- 3. Prepare and present a report to analyze the impact of the quality improvement program on the quality and safety of the organization's services
- 4. Write a final report to describe your process

Summary Overview

The GI Case Study involves a community-based health care organization that has implemented a quality improvement program to reduce the number of medication errors in the outpatient setting. The project manager is the chief of staff and the project team consists of the chief of staff, the chief of pharmacy, and the chief of medical records. The project manager is responsible for the overall management of the project and the team. The project manager is responsible for the overall management of the project and the team. The project manager is responsible for the overall management of the project and the team.



The photograph shows a brightly lit hospital hallway. In the foreground, two healthcare workers are walking away from the camera. One is wearing a white lab coat, and the other is wearing blue scrubs. In the background, a patient is lying in a gurney, being pushed by another healthcare worker. The hallway has a clean, clinical appearance with white walls and a light-colored floor.

Characteristic #4: Authenticity Examples

Health Information Management and Technology (HIMT)

<p>Lesson 08 (Policies and procedures)</p>	<p>The case study continues to unfold. The QI committee has reviewed your initial data report on the med errors and your findings from the literature review. They ask that you do a more in-depth review of additional aspects of the problem and provide them with more details.</p>	<p>Policy and procedure recommendations</p>
<p>Lesson 10 (Workforce analysis)</p>	<p>For this part of the QI project you will explore how vacancy rates for registered nurses at your hospital compares with Wisconsin and describe the current and future impact this vacancy rate has on your quality improvement initiative.</p>	<p>Role of workforce issues in med errors</p>
<p>Lesson 11, 12, & 13 (Dashboards and final report)</p>	<p>The board of directors have requested that you present the findings of your QI work. Specifically, they want to see your data presented in an easy to interpret dashboard report. In addition to the data dashboard, they have asked you to deliver a 5-minute presentation. This is a big deal and involves high-profile stakeholders. This is your opportunity to impress them with your hard work.</p> <p>You have a couple of weeks before the presentation, but you know you've got quite a bit of information to summarize, and you've never built a dashboard before. You realize it would be wise to get started on this project because two weeks isn't very long. Especially with your busy schedule.</p>	<p>Dashboard and presentation to the board of directors</p>

Characteristic #4: Authenticity Examples

IL- Civil War

Option 2: Research Paper

Write a research paper in a more formal academic style. This essay should introduce the student's topic, make an argument about the research, and support that argument with evidence. This research paper should be formally organized and presented. As this option is designed to profile student abilities in research it should build from both primary and secondary research.

Requirements:

- Between 1,000-2,000 words (or longer)
- No limit to the number of documents one can include or cite.
- Include a formal research bibliography formatted according to the Chicago Manual of Style.

Ideal For

- Discussions focused on key transformations, ideas, or dynamics
- Students interested in pursuing a history major, graduate study in history, or freelance historical or nonfiction (or fictional) writing—this is a great opportunity to start building a bigger project like a thesis, graduate school writing sample, or even an MA Thesis
- Students with an especially rich topic and research base

Option 3: Web Content

Write a blog post included in the New York Times "Opinion" project that commemorated the 150th anniversary of the Civil War (September 2011-2012). Projects of this type should model the researched and clearest (most accessible) form of writing. The blog will share compelling character or place-based stories that are appropriate for a wide general audience of readers. In this category, you may choose to write about whatever topic, but because this is the shortest writing option, the writing and research must be exemplary.

Requirements:

- Between 750-1,000 words
- Include an image (historical or contemporary) to help tell the story
- Brief captions, of up to 100 characters, for the image selected
 - Note that these captions do not count towards the overall word count
- Include links to three (3) outside resources that will be useful and engaging for the general reader
 - These history sites, museums, national battlefields parks, programs, teaching plans, or other web-based digital content

Ideal For

- Students interested in topics focused on places, individual people, or events that tell a clear story, and with an identifiable beginning and end
- Students who like to write within a template or framework (2000-word limit, writing from a point of view, the reader's attention and deliver the main point very quickly)
- **Learning journalism and communication majors**

In what ways do you or could you construct authentic assessments or activities for your content area?

Characteristic #7: Fitness for Self-Assessment

Promote self-regulated learning.

- Make criteria clear through rubrics.
- Create practice assessments that diagnose weaknesses and stimulate reflection and self-explanation.



Characteristic #7: Fitness for Self-Assessment Examples

IL-Civil War

-Students submit their final project in multiple stages and receive feedback: Proposal, Draft, and Final.

IL- Appreciation and History of Music

-The rubric is well thought out and detailed.
 -Word choice is clear.
 -Students know what it takes to complete the level of work they want.

Criteria	Exemplary	Accomplished
Following the Essay Prompt	22 points Clear topic, and supporting statements, directly addresses the essay prompt.	22 points Satisfactory and relevant statements, mostly relevant to essay prompt.
Support	14 points Comprehensive and precise use of information, detail, examples, and accurate terms.	8 points Satisfactory and generally accurate use of information, detail, examples, and accurate terms; minimal relevant information.
Clarity and Writing Mechanics	22 points Nearly all sentences are grammatically correct and clearly written.	8 points Some sentences are grammatically incorrect and clearly written; minimal errors do not adversely affect the reader's ability to understand the essay.
Completeness	22 points Thoroughly addresses and completes every aspect of the assignment.	8 points Generally addresses and completes most aspects of the assignment.

Characteristic #7: Fitness for Self-Assessment Examples

Data Science

-This explains what “B” work looks like and why that grade would be given.

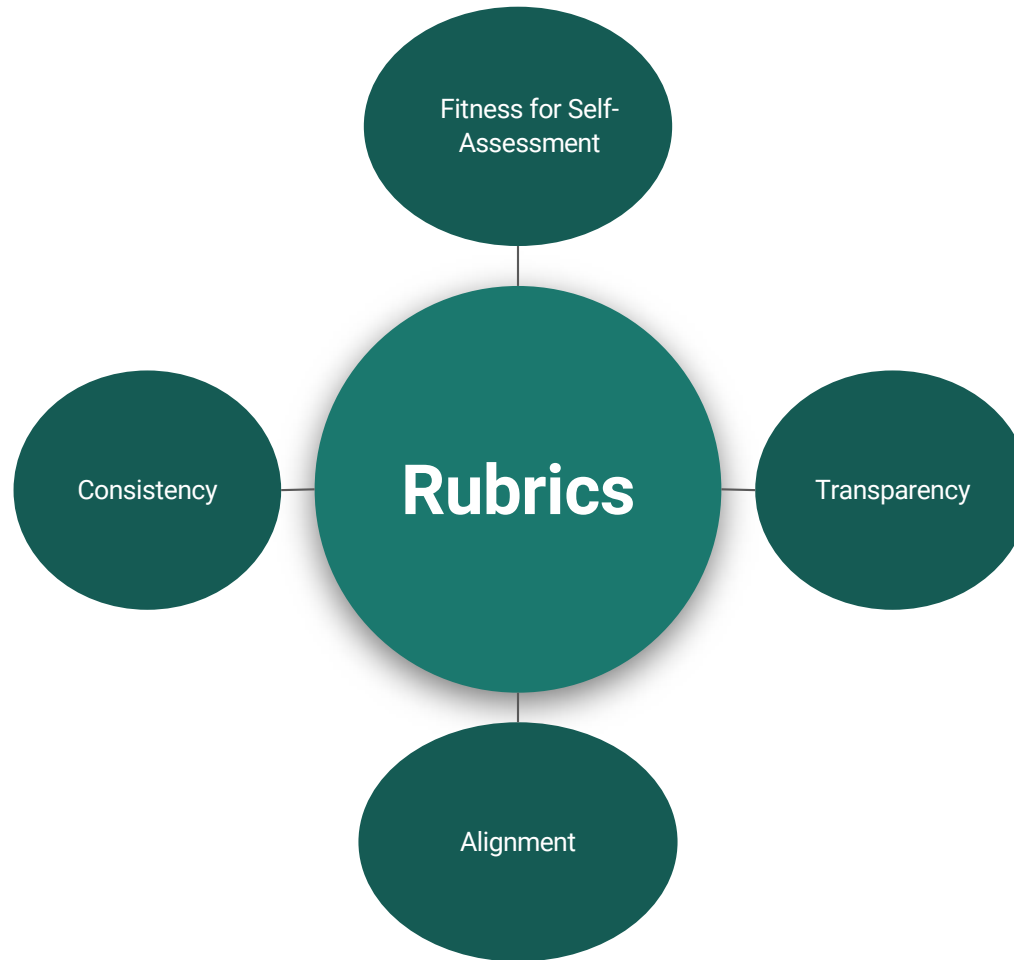


How do you promote self-regulated learning in your courses?

- Rubrics
- Practice assessments with feedback
- Student examples

Maintenance
Revision
New Course Development

Rubrics tell the students your metric for success.



Creating Quality Rubrics

	Exemplary	Accomplished	Developing	Beginning
Answering the essay prompt	Clear, logical, and compelling statements; directly applicable to essay prompt	Satisfactory and reasonable statements; mostly relevant to essay prompt	Plausible and basic statements; somewhat relevant to essay prompt	Unclear, illogical, or trivial statements; not applicable to essay prompt
Support	Comprehensive and precise information; examples; terms	Satisfactory and generally	Partial inclusion of	Inadequate and minimal use of
Clarity & Writing Mechanics	All sentences grammatically clear	reader's ability to understand the essay	essay	
Completeness	Each essay contains at least 14 lines of text	Most essays contain at least 14 lines of text	At least one essay contains at least 14 lines of text	No essay contains at least 14 lines of text

Use the course and/or unit learning outcomes to define the criteria to evaluate.

Objectives:

- Demonstrate an understanding of the course material in question
- Support their statements using detailed information, descriptions of musical features, and personal insight
- Use proper writing mechanics

	Exemplary	Accomplished	Developing	Beginning
Answering the essay prompt	Clear, logical, and compelling statements; directly applicable to essay prompt	Satisfactory and reasonable statements; mostly relevant to essay prompt	Plausible and basic statements; somewhat relevant to essay prompt	Unclear, illogical, or trivial statements; not applicable to essay prompt
Support	Comprehens precise u informati examples terms	information		use of ple, and nt incorrect he assignment
Clarity & Writing Mechanics	All sentences are grammatically correct and clearly written	A few sentences are grammatically incorrect or not clearly written; minimal errors do not adversely affect the reader's ability to understand the essay	Frequent sentences are grammatically incorrect or not clearly written; errors detract from the reader's ability to understand the essay	Serious writing and grammar errors throughout; unclear writing; difficult for reader to understand the essay.
Completeness	Each essay contains at least 14 lines of text	Most essays contain at least 14 lines of text	At least one essay contains at least 14 lines of text	No essay contains at least 14 lines of text

Define the performance levels to be used.
 These can vary in number. Most rubrics have between 3 and 5.

	Exemplary	Accomplished	Developing	Beginning
Answering the essay prompt	<u>Clear, logical, and compelling statements</u> ; directly applicable to essay prompt	<u>Satisfactory and reasonable statements</u> ; mostly relevant to essay prompt	<u>Plausible and basic statements</u> ; somewhat relevant to essay prompt	<u>Unclear, illogical, or trivial statements</u> ; not applicable to essay prompt
Support	Comprehensive and precise use of information, detail, example, and applicable terms	Satisfactory and generally accurate use of information, detail, example, and applicable terms	Partial inclusion of information, detail, example, and applicable terms; recurring incorrect information throughout the assignment	Inadequate and minimal use of information, detail, example, and applicable terms; frequent incorrect information throughout the assignment
Clarity & Writing Mechanics	All statements are grammatically correct and clearly written	Most statements are grammatically correct and clearly written	At least one statement is grammatically incorrect or unclear	Many statements are grammatically incorrect or unclear; difficult for reader to understand
Completeness	Each essay contains at least 14 lines of text	Most essays contain at least 14 lines of text	At least one essay contains at least 14 lines of text	No essay contains at least 14 lines of text

Describe the expected characteristic of each criterion for each performance level.

The descriptions between performance levels are well defined and clearly differ in the performance expectation. This type of language also helps with consistency between graders.

Think used to describe...	Consider using these as high-level performance indicators	Consider using these as mid-level performance indicators	Consider using these as low-level performance indicators
Strategy or technology	<ul style="list-style-type: none"> Process Efficiency Quality Cost Time Customer satisfaction Employee satisfaction Innovation Market share Brand reputation 	<ul style="list-style-type: none"> Revenue Profit Market share Customer retention Employee retention Operational efficiency Cost reduction Innovation pipeline Market penetration Brand awareness 	<ul style="list-style-type: none"> Time Quality Efficiency Cost Customer satisfaction Employee satisfaction Innovation Market share Brand reputation
Organizational	<ul style="list-style-type: none"> Structure Process Efficiency Quality Cost Time 	<ul style="list-style-type: none"> Revenue Profit Market share Customer retention Employee retention Operational efficiency Cost reduction 	<ul style="list-style-type: none"> Time Quality Efficiency Cost Customer satisfaction Employee satisfaction Innovation Market share Brand reputation
Value proposition	<ul style="list-style-type: none"> Process Efficiency Quality Cost Time Customer satisfaction 	<ul style="list-style-type: none"> Revenue Profit Market share Customer retention Employee retention Operational efficiency Cost reduction 	<ul style="list-style-type: none"> Time Quality Efficiency Cost Customer satisfaction Employee satisfaction Innovation Market share Brand reputation

Getting the most out of your rubrics



Getting the most out of your rubrics

Have your students use the rubric to evaluate the work of previous students.



Getting the most out of your rubrics

Have your students use the rubric to evaluate the work of peers as part of the assessment process.



Getting the most out of your rubrics

Have your students use the rubric to evaluate their own work and include it as part of the submission.

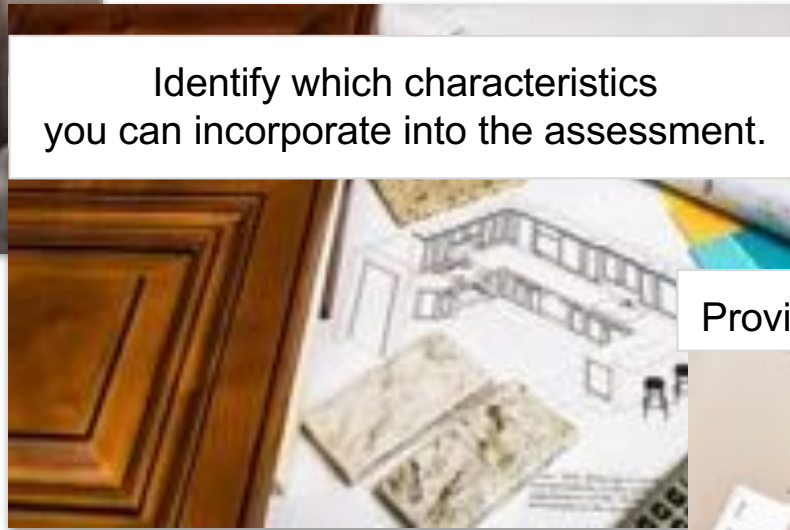


Putting it all together

Determine what students must demonstrate.



Identify which characteristics you can incorporate into the assessment.



Provide feedback to your students.





References

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- Mertler, C. A. (2001). Designing scoring rubrics for your classroom. *Practical Assessment, Research & Evaluation, 7*(25), 1-10.

What about the other characteristics?

Characteristic #8: Transparency

Create assessments that are clear and understandable to all participants.

- Detailed instructions
- What resources are and aren't allowed during assessments
- Purpose of assessment
- Time limits



Characteristic #6: Consistency

Establish evaluation methods that are consistent across faculty, students, and time.

- Two common methods to achieve consistency are grading rubrics and point breakdowns.
- Create assessments that not only measure meaningful results but are also scored consistently across time and people.
- Rubrics are usually available to both faculty and students; point breakdowns are usually visible only to faculty.



Characteristic #5: Fairness

Give all learners an equal chance at success.

- Students can come from any geographic area, including outside of the US.
- Students' first language may not be English. The assessments should require levels of linguistic competence comparable with professional practice, while avoiding idioms and colloquial language when possible.



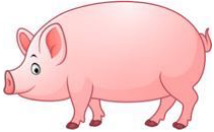
Characteristic #5: Fairness Example



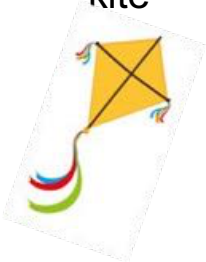
Characteristic #5: Fairness Example

Sort these images.

Short 'i' sound
pig



Long 'i' sound
kite



Oddball sound



Characteristic #2: Usability

The benefits of the assessment outweigh the time and resources required.



