Contents

Centering Learning and Equity in Assessment Workbook

This workbook is designed for the Tapia 2021 Workshop facilitated by Sarah M Brown and Victoria Chávez.

In this workshop, we will discuss assessment from the assignment level to the course level that aligns with learning and equity. We will first out key terms, show how assessment can encourage learning and support equity. Next, participants will practice applying the new terminology and theoretical grounding by studying examples. Finally, participants will get to revise materials for their own courses.

Grading for Learning

While students often view the work they do in class as a means to a grade, our goal as instructors is typically that the activities we ask them to do help them learn.

We can focus the way we evaluate that work to center students learning to help direct their attention to their own learning.

Key features

Equitable Assessment

Key features of equitable assessment:

-
-

Case Studies

The Cases section contains examples of assignment and (the grading section of) syllabi that demonstrate the principles for grading that supports learning and equity.

In your group, discuss one assignment and one grading scheme. For each case study, answer the following questions:

1. Which principle(s) are applied?
2. How is the principle you identified applied?
3. What do you like about this case?
4. What would you want to change?
5. What questions do you have about case study?

Templates and Guided Practice

This section of the workbook is designed to support you in applying the concepts from the workshop to your own course.

1. Decide if you will revise assignments but keep the scheme or focus on revising the grading scheme and policies and have assignments follow.
2. Choose any of the templates or guided design documents in this section to follow. You can work in markdown in the workbook or in another place you prefer to work.
3. Consider 1-2 questions you have to focus your peer feedback so that it’s the most helpful.

Peer Feedback

In your group take turns describing the change you’ve started working on.

Reflection

1. What was your overall thoughts on starting these revisions?
2. How was the peer review? did you learn something helpful?
3. What is the one most important change you plan to make to your course based on the workshop today?

Scheme: Competency-Based Grading in Programming for Data Science

Full Sites:

- Fall 2020
- Fall 2021

This course uses a competency-based grading scheme and assesses assignments on specification agains an overall course rubric.

Instructor Process

I broke down the course learning outcomes into 15 component skills and wrote three outcomes for each describing a skill acquisition expected for each skill. This describes each of the 45 (15*3) achievements that constitute the students' grades.

System basics

To earn an A required all 45 achievements, a B required all level 1 and level 2 achievements, a C required all level 1 achievements. Students could earn level 1 achievements in any activity: class participation, weekly programming assignments, or a portfolio submitted 4 times through the semester.
Level 2 achievements could be earned only on assignments and portfolio checks.
Level 3 achievements could only be earned on portfolio checks.

In class questions checked basic understanding through multiple choice questions and short programming problems. These were cumulative only, not graded as a percentage correct. Assignments were designed to assess level 2 achievements, such that each skill was assessed in at least two assignments. Portfolios were open ended, encouraging students to use general prompts to explore the material deeper than was covered in class, guided by the level 3 achievement definitions.

Equity and learning focus

The grade was not based on averaging performance across activities; the basis was the material only. Students had at least 2 chances (and mostly many more) to earn every single achievement. A student could require 2 attempts at every single achievement and still earn an A. Students could skip assignments as they deemed necessary for their regular schedule. Because the grade was cumulative, students focused on their learning; gradin was that they had to demonstrate understanding: both applying material and communicating well enough.

Assignment: Data Science Portfolio

live site

Submissions

Students submitted their portfolio as a jupyter book via GitHub classroom. They added more to the same repository over the course of the semester.

Prompts

Overall

The prompts provide a starting point, but remember that to earn achievements, you'll be evaluated by the rubric. You can see the full rubric for all portfolios in the syllabus. Your portfolio is also an opportunity to be creative, explore things, and answer your own questions that we haven't answered in class to dig deeper on the topics we're covering. Use the feedback you get on assignments to inspire your portfolio.

Each submission should include an introduction and a number of 'chapters'. The grade will be based on both that you demonstrate skills through your chapters that are inspired by the prompts and that your summary demonstrates that you know you learned the skills. See the formatting tips for advice on how to structure files.

Correct an Assignment

Choose an assignment that you did not achieve the target level for. Write a blog style notebook analysis that corrects what you could have done better, what you learned, and addresses the misconception if applicable.

> **Note**
>
> To get credit for this, student had to not only correct, but truly reflect and explain.

Deeper Analysis

For one of the assignments, if there was something you were curious about. Try it out and investigate how to answer it. Vary parameters and document your investigation.

New Analysis

For a topic of interest, clean, explore and model the data. Work with messy data or data provided in multiple files to earn prepare and construct achievements or use clean data to earn only EDA and modeling achievements.

CheatSheet

Make a cheatsheet with examples of the several different parameter settings for common operations for one topic.

This cheatsheet is an example, it's too broad, but it's the same idea. Yours should cover one topic in greater detail and demonstrate your skill according to the rubric.

Syllabus: Skill Acquisition Rubric

Building out this rubric is the first step in designing a competency-based grading scheme like Sarah's [Programming for Data Science]

Keyword	Skill	Level 1	Level 2	Level 3
a single word	multiworkd phrase that summarizes	a learning outcome at the basic level	a mid-level learning outcome	an advanced level learning outcome

Assignment: Portfolio

1. How will students submit the portfolio (in form)?
2. How often will student submit for feedback?
3. How often should they work on the portfolio?
4. What kind of content will students contribut to their portfolio?
5. What kinds of prompts will guide their work?

By Sarah M Brown and Victoria Chávez