

Learning Self-Assessment: End-of-Quarter Activity

What types of meta-learning did you do?

In my work as an educator, I feel very strongly that one of the most powerful gifts I can give you is to coach you to be a more sophisticated learner. This includes helping you develop system-navigation strategies to help you thrive in school despite many of the harmful policies that undergird our education systems. I also work hard to help you learn how to be a deep learner. This first set of reflection questions is designed to get you to reflect on how you've changed as a learner based on your experiences in this course.

1. Let's define the phrase *meta learning* as the process of learning how to learn. This includes an explicit focus on developing vocabulary to describe, reflect on, and improve one's own learning and learning processes. What kinds of meta learning did you do because of your involvement in this course?

Some kinds of meta learning that I did during this course was recalling what I did/how I did the problems that I was able to solve. Also, making sure that I knew I could grow cause of struggle, instead of falling under a fixed mindset. These two helped me with this course because I've always found myself a slow learner, so making sure I knew the material before heading to the next concept and telling myself that I CAN grow gave me positive reinforcement

2. Let's define *deep learning* to be learning that involves an intense, distraction-free focus on growing your abilities by pushing beyond the limits of your current capacity. When you engage in deep learning, you actively reach for and repeat skills that you want to build by paying extra special attention to your performance during each repetition. When were you most engaged in deep learning during this quarter? What led to that engagement? How did your work in this class contribute to or detract from your deep learning experiences this quarter?

I think I was most engaged in deep learning during the week leading up to my group presentations. This was because I knew I had to have something or know what my group was going to present, so I definitely did purposeful practice. This improved my skills in understanding concepts/terms, which also played a part in my other classes as I got influenced to do the same, instead of lazy the rest of my other work.

3. Let's define the phrase *system navigation* as the process of protecting yourself against harmful policies that you encounter in your formal education so that you can accomplish your academic and career goals without internalizing the harm you suffer along the way. What new learning strategies did you develop this quarter that you plan to use in future quarters to more effectively navigate the higher education systems in which you are a part? In other words, what new skills did you develop that you feel will make you more effective in your other classes?

New learning strategies I developed this quarter was bringing any useful materials with me to lecture, and also making my study habits more proactive and intentional. For instance, instead of studying for 6 hours, but only retaining about 2 hours worth of content, I made small time blocks to where I enter deep learning, helping me retain information more easily.

4. Let's define the phrase *system transformation* as the process of imaging and advocating for educational policies that more closely align with your desires for your life, your loved ones, and your society. Given your experiences in this course, what types of system transformation would you like to see? What changes would do you feel would make your college classes and your experience as a college student more valuable and less painful?

Some changes I would like to see are having professors that are more passionate for their students, than the output that they create. I mean this in a way that can be described as having teacher care more about how the student is doing, and seeing how they can help foster their growth.

What content did you learn?

5. What did you learn about the content of this course?

In this course, I've learned how inner products and vector norms work, alongside matrix modeling, their inverses, and also a little bit of LU factorization.

6. How proficient do you feel with the content of this course? What are you good at? What new technical skills did you build during your time in our course?

I feel moderately proficient now, with basic calculations and structure on inner products and triangular matrices. The biggest technical skill that I built would be performing the LU Factorization

7. What weaknesses do you have with the content of this course? Let's presume, for a moment, that you have a deep interest in the content of this course. What would you need to do to become more skilled in this content? If you'd like, brainstorm parts of a plan you might implement to work towards deeper proficiency with this content.

Weaknesses I have with this course is connecting the conditions for IMT without looking at my notes, so I'd probably have to start practicing maybe proofs for IMT

What have you learned about yourself and your motivations for education?

8. Why are you in college? How has your understanding of your own motivation for college and for your education changed since the beginning of this class? What can you do to strengthen this motivation when learning gets hard and how can you tap into this motivation to thrive in college and beyond?

I'm in college because I want to become an engineer. My understanding behind my own motivation since this class has REALLY opened my eyes. I feel more open to struggle and wanting to get into deep learning, so making sure I stay on track with my deadlines and schedules will help a lot

9. What do you plan to do differently in future classes based on your experience in this class? What lasting changes do you plan to make in the way you learn, work, and navigate your college degree create because of our work together?

Based on my experience with this class, I definitely will make sure I change my learning throughout every class/quarter, making sure I learn in a way that's best suited for my specific classes, and staying in touch with my professors in office hours

Next Steps – Keep Building Your Reading Systems

10. Perhaps the most important part of this class is not what you've finished this quarter but what you plan to do in the future with the learning experiences you created during our time together. As you think about your future, I suggest that perhaps the most powerful habit you can create is the habit of reading.

To highlight this idea, I was inspired by the work of the Black female educator [Harriet Ball](#) and the description of her amazing work in the book [*Punished for Dreaming: How School Reform Harms Black Children and How We Heal*](#) by [Dr. Bettina Love](#). Using this as inspiration, I share the following phrase with you:

“Reading is knowledge, knowledge is power, power is money. What are you going to do with the money you earn from the knowledge you build to transform your world in ways that you care about?”

As you think about this quote, please read the following blog post:

<https://jeffandersonmath.wordpress.com/2024/01/01/key-questions-to-build-reading-systems/>

Begin drafting your responses to the 10 questions I pose in that post. You're welcome to share your drafts in this reflection or keep those responses private. Remember, if you're doing good work, your draft responses to those questions now will look very different to your responses in five years. The point of this exercise is to encourage you to develop and refine your reading habits to propel your learning for years and decades to come.

[I'll keep my responses private](#)

11. Let's end this reflection with some hope for your future.

Please identify a list of books that you want to read to enhance your abilities as a learner, a knowledge worker, and a citizen. These books might focus on meta-learning, productivity, content expertise in your chosen discipline, financial planning for your future, building your abilities to engage in system transformation work, or any other learning that you believe will have a substantial impact in your professional life.

Note: please do not list books that you read for entertainment. While entertainment reading is both fun and valuable, I'm asking you to make a wish list for books you believe will propel your professional life. Of course, if you plan to be a fiction writer and you want to study the works of those that came before you to propel your career, that counts. The point of this exercise is that your intention for the reading matters.

For some fun ideas from Jeff related to our five learning objectives, you might enjoy the following list:

<https://jeffandersonmath.wordpress.com/2022/12/13/40-books-to-enhance-and-deepen-your-college-education/>

If you'd like detailed ideas about how to read a lot, please check out the following video:

Develop Your Deep Reading Systems: <https://youtu.be/EVwQ8deW6ig?feature=shared> (37min, 07sec)

Below, please some possible titles that you are interested in reading. For each title on your list, identify how you plan to get access to that book (like at the library, by purchasing a copy, by borrowing a copy from a friend, etc.). Remember, when you make this list, you're not committing to finishing these books. Instead, you are capturing your interest as a way to guide your future work. Cheers to your learning and to your ability to grow your brain.

Determine Your Own Grade

The state of California tasks me, as your teacher, to come up with ways to measure your proficiency in this class. This quarter, I have perhaps the most sophisticated and accurate measurement tool that I've ever used to determine grades: you. I choose to trust you and to put my faith in your genius. I believe you are the world's leading expert on your own learning. Of course, I recognize that I have deep expertise in both mathematics and the science of learning that are valuable for your learning. But ultimately, what matters most about your experiences in this class is what you do with the resources I've provided and what you know is true about yourself. Thus, you will be assigning your own grade in this class.

Before you make that decision, I want to share some thoughts about grading with you. The dominant narrative our society has about the purpose of grades is that, when we assign grades, we are using those single letters as efficient ways to describe student performance. Ironically, there is a [mountain](#) of [scientific evidence](#) that shows that grades do not do what our society says. In fact, all the following observations have been found to be true in research studies on learning, education, and about the context of the letter grading system:

1. Grades tend to reduce students' interest in learning itself.
2. Grades tend to reduce students' preference for challenging tasks.
3. Grades tend to reduce the quality of students' thinking.
4. Grades are NOT valid, reliable, or objective.
5. Grades distort the curriculum.
6. Grades waste a lot of time that could be spent on learning.
7. Grades encourage cheating.
8. Grades spoil teachers' relationships with students.
9. Grades spoil students' relationships with each other.
10. Grades are not good incentives: they incentivize the wrong stuff including product over process, what the teacher thinks over what the student thinks, performance over deep learning, etc.
11. Grades impose a hierarchical system that pits teachers against students and encourages competition by ranking students against each other.
12. Grades are currency for a capitalist system that reduces teaching and learning to a mere transaction.
13. Grades are an institutional instrument of compliance, domination, and control.
14. Grades are tools of a massive, coordinated effort to take humans out of the educational process.
15. Grades are not good feedback: grades are too simplistic and attempt to turn something that is extremely complex (learning) into something very simple (a small set of capital letters: A, B, C, D, F, FW, W, EW and I).
16. Grades are not good markers of learning: grades often communicate more about a students' ability to follow instructions rather than how much that student has learned.
17. Grades aren't fair and they will never be fair.

As you decide on your final grade in this class, please think about your answers to questions 1 – 9 of this self-assessment and remember these facts about grading.

ASSIGN YOUR OWN GRADE

In the space to the right, please indicate the grade you earned for your learning in this class.

A

12. Why did you make this choice for your final grade? What led to this decision?

I chose this grade because I believe it reflects my current balance of deep understanding in core terminology and concepts. I found success in implementing some concepts onto my own major(ISE), and I feel confident to present them when asked.

13. How meaningful is this single letter in summarizing your learning during your 12 weeks of experiences in this class? How accurate is this “measurement” of your performance?

This letter grade is moderately meaningful for my learning in this class, because although I'm able to perform basic calculations and follow procedures, it doesn't reflect on the technical side of skills that I build, such as my learning process, and also my understanding of modeling matrix multiplication.