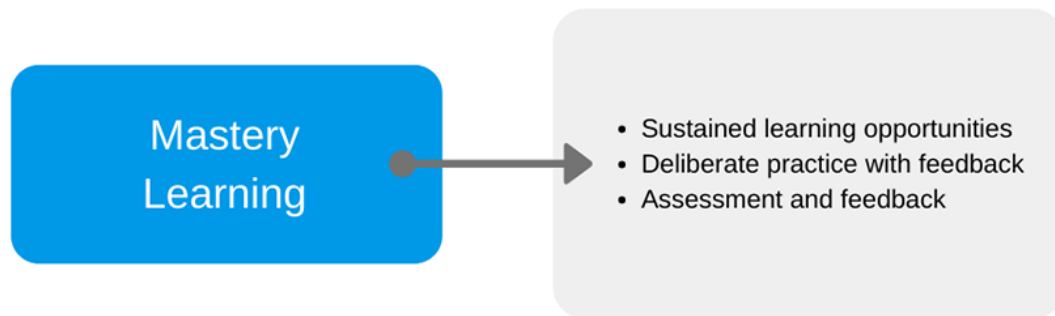


Mastery Learning



Think about how humans learn best. It's uncommon to learn something once and then move on, as achieving mastery rarely happens upon an individual's first experience with a concept. More often, success comes from repeated opportunities to revisit concepts in increasingly complex ways.

Repeated practice makes a difference. But the adage, "practice makes perfect," isn't exactly accurate. In many cases, practice that is unmediated isn't all that useful. For instance, practicing addition for a prolonged period of time won't move a learner toward mastery if the learner is adding numbers incorrectly. But when practice is coupled with meaningful assessments and feedback, practice is more meaningful—and it becomes a step toward mastery.

Many asynchronous learning platforms create opportunities for sustained learning, assessment and feedback to ensure users are reaching mastery. Such platforms layer in ways for learners to engage with and implement the feedback.

Take, for example, learning a new computer language to move into a more advanced position at work. In this case, it's not enough to have passing familiarity with the computer language; mastery is necessary to be successful in the new position. Consequently, a learner might seek a learning platform that uses a mastery learning model—one that teaches a concept, provides opportunities for practice, offers feedback on practice performance, reviews previously taught concepts and assesses for mastery. Rinse and repeat for each unit or concept in the computer language course.

But what exactly does effective practice with feedback look like on asynchronous learning platforms? The learner has an opportunity to practice a concept that has been recently



introduced—maybe by answering questions or submitting an artifact to demonstrate understanding—and is given specific direction for how to tackle areas for improvement.

The learner who wants to learn a new computer language might be prompted to answer some recall questions on a recently learned concept or asked to apply the concept by writing a piece of code to answer a question. Whatever the practice entails, the learner would receive feedback that she would ideally take with her in her next engagement with the content.

That's all well and good, but only if the feedback is useful. Effective feedback takes many forms on asynchronous learning platforms. Take Coursera, for example. Course content providers can create their own feedback on practice assignments by, for instance, providing explanations to address common learner misconceptions or referencing specific materials for learners to review. The feedback is then automatically generated by the platform based on how the learner responds in the practice assignment.

Question 3 1 Point

VARIATION 1

A stock has a price of 100. Over the following two months, its monthly returns are 20% and 10% respectively. Among the following expressions, which is/are equal to the price of the stock after these two months?

☐ Stock price after two months = $100 * (1 + 15\%) * (1 + 15\%)$

Wrong. In the first month, the stock price increases by 20% meaning it went from 100 to 120. We can write it as: $100 * (1 + 20\%) = 100 * 1.2 = 120$. In the second month, the stock price increases further by 10%. So it went from 120 to $120 * (1 + 10\%) = 120 * 1.1 = 132$.

The expression in this answer would yield the following final price (after 2 months):

$100 * (1 + 15\%) * (1 + 15\%) = 100 * 1.15 * 1.15 = 132.25$

This result is very close but not equal to 132.

☒ Stock price after two months = $100 * (1 + 20\%) * (1 + 10\%)$

Correct! In the first month, the stock price increases by 20% meaning it went from 100 to 120. We can write it as: $100 * (1 + 20\%) = 100 * 1.2 = 120$. In the second month, the stock price increases further by 10%. So it went from 120 to $120 * (1 + 10\%) = 120 * 1.1 = 132$.

Writing the whole thing together (from the beginning of the 2 months):

$100 * (1 + 20\%) * (1 + 10\%) = 100 * 1.2 * 1.1 = 132$.

An example of formative assessment feedback in Coursera (Source: Coursera)


3. Adaptive design with dynamic serving is...

0 / 1 points

☒ Designing pages for the mobile view.

This should not be selected

Refer to the video on the Benefits of Responsive Design. Also, keep in mind that the "mobile-first" paradigm means designing pages for all views, not just mobile.



An example of summative assessment feedback in Coursera (Source: Coursera)

Canvas, on the other hand, has functionality for instructors to provide feedback through inline comments or annotations on assignments.



Page 1 of 2 ZOOM +

↑ 4 More Comments

Emily Boone
Research Paper

Let's schedule a meeting to discuss this in person. I have some suggestions for the flow I want to go over with you.

4 Doug Roberts
Can you expand on this?
3 Replies

Doug Roberts
Some good ideas here. For the most part, you stay on topic. I think improving the transition into this paragraph would really strengthen the point you're trying to make. T [...]

1 Doug Roberts
Don't lose the main point of your paper

Emily Boone
Can we set up a meeting about this? I'm kind of confused about how to bring this back to the main point and any guidance you can provide would help me understand how to make this paper better. Thanks again!

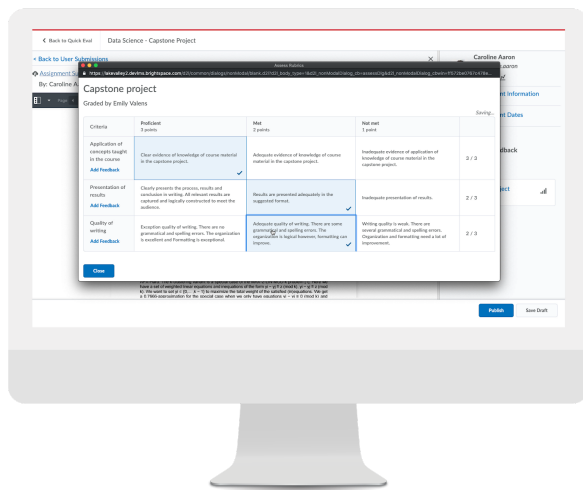
2 Reply

Annotated feedback on an assignment submitted via Canvas (Source: Canvas website)

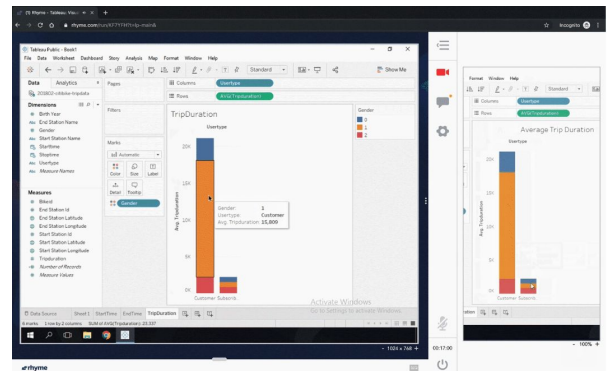
How does practice paired with feedback help a learner achieve mastery? That's where assessment comes in. Asynchronous learning platforms designed around mastery have benchmark milestones along the learning journey, which help learners earn a "stamp of approval" at regular intervals. But platforms gauge understanding differently at each checkpoint.

For example, learners using Brightspace might encounter assessments in the form of quizzes, video assignments or rubrics. On Coursera, content providers primarily use multiple choice quizzes, but can also design hands-on labs to assess understanding of more technical subjects.





An example of a rubric on Brightspace (Source: D2L)



An example of a hands-on lab on Coursera with the learner view on the left and the instruction video view on the right (Source: Coursera)

Many adult learners require proof of mastery because they're learning a new concept or skill to advance their careers. Some platforms, like Coursera, award certification when a learner satisfactorily completes assessments in a given learning program. In Digital Promise's Micro-credential Platform, each micro-credential assessor uses a set of rubrics to review a learner's work samples and artifacts and determine whether the learner has demonstrated competency in the particular skill. Regardless of whether the platform or a person grades the assignments and assessments, there's typically an opportunity for learners to be reassessed if they fail to achieve mastery on their first attempt.

The bottom line is that learners don't master concepts or skills based on practice alone—or feedback or assessment. Instead, it's crucial that platforms interweave practice, feedback and assessment to lead learners on a path toward mastery.

