

Coursera Pedagogy Principles

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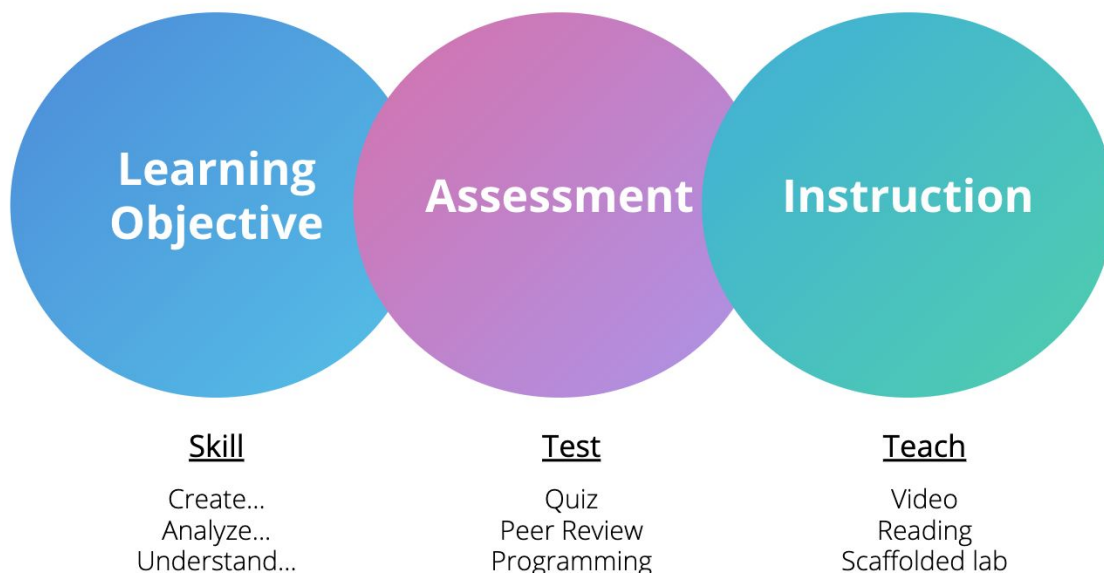
Coursera's Pedagogy Principles incorporate findings from peer-reviewed educational research and learning science. We base our platform technology and education philosophy on mastery learning,¹ which focuses on the importance of feedback in learning and promotes the mastery of a topic before moving on to more advanced materials.² Quality education that supports mastery learning requires the tight alignment of learning objectives, instructional materials, and assessments.³

Use backwards design⁴ by creating learning objectives and assessments *first* in order to align content with instructional materials. Learn more about [creating Specializations on Coursera](#).

All content on Coursera must include these Pedagogy Principles:

- **Learning objectives** to clearly define⁵ the desired outcomes and skills for learners^{6,7} Your learning objectives may be what completes a statement like "By the end of the course or video, you will be able to..."
- **Assessments** to measure learner progress⁸ and mastery of the objectives. Examples of assessments are quizzes, peer reviews, and programming assignments.
- **Instructional materials** to scaffold the learning path⁹ by helping learners build their skills and knowledge step by step as they work towards mastery.¹⁰ Examples of instructional materials are videos, readings, and labs.

Pedagogy Principles



Content requirement: Learning objectives

Key takeaway: Content identifies skills to be learned as learning objectives.

When creating content on Coursera, use backwards design⁴ (i.e., begin with the end in mind) by writing measurable, action-oriented learning objectives. A learning objective describes what learners will be able to do by the end of a unit of learning.⁵ Learning objectives help learners see the value of an online learning experience, sustain motivation and achievement,¹¹ and help them practice metacognition skills.¹²

Identify clear and measurable learning objectives for all units of learning offered on Coursera, including degree programs, Specializations, courses, modules, lessons, videos, etc.

Learn more about [writing effective learning objectives](#) and [Bloom's taxonomy](#).

Content requirement: Assessments

Key takeaway: Content includes assessments to measure learner progress.

Assessments measure learners' skill acquisition.³ Effective assessments allow learners to practice concepts introduced in instructional materials, provide feedback on their progress, and evaluate their mastery of learning objectives. Each assessment should offer an opportunity to demonstrate achievement of at least one learning objective. Choose assessment types that best fit your learning objectives.

Successful online learning experiences incorporate formative (practice) assessments, summative (graded) assessments, and helpful feedback to the learner.^{13,14} Frequent practice opportunities also reinforce long-term memory and help learners master the materials.¹

Learn more about [designing assessments](#) and [assessment types](#) on Coursera.

Content requirement: Instructional materials

Key takeaway: Content includes instructional materials to teach learning objectives.

Content offered on Coursera should incorporate some form of instruction to facilitate the learning objectives. Instructional materials are content [items](#) that systematically teach information.³ The most commonly used instructional materials on Coursera are [videos](#). You can also use [readings](#), interactive [plugins](#), and other items to facilitate instruction to learners.

Instructional materials should scaffold the learning path by helping learners build their skills and knowledge step by step as they work toward mastery. We recommend defining your learning objectives and designing the assessments to test those objectives *before* creating your instructional materials.

Learn more about [designing an online curriculum](#) and [producing engaging videos](#).

References

1. Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-16. <https://doi.org/10.3102/0013189X013006004>
2. Slavin, R. E. (1987). Mastery learning reconsidered. *Review of educational research*, 57(2), 175-213.
3. Gagne, R. M., & Briggs, L. J. (1974). Principles of instructional design. Oxford, England: Holt, Rinehart & Winston.
4. Isecke, H. (2011). *Backwards planning: Building enduring understanding through instructional design*. Shell Education.
5. Diamond, R. (1998). Clarifying instructional goals and objectives. *Designing and Assessing Courses and Curricula: A Practical Guide*, 9(2), 147-160. <https://doi.org/10.5465/amle.9.2.zqr358>
6. Chatterjee, D., & Corral, J. (2017). How to write well-defined learning objectives. *The Journal of Education in Perioperative Medicine: JEPM*, 19(4), E610.
7. Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., ... & Wittrock, M. C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives, abridged edition. *White Plains, NY: Longman*.

8. Pellegrino, J. W., Chudowsky, N., & Glaser, R. (2001). *Knowing what students know: The science and design of educational assessment*. National Academy Press, 2102 Constitutions Avenue, NW, Lockbox 285, Washington, DC 20055.
9. Van de Pol, J., Volman, M., & Beishuizen, J. (2010). Scaffolding in teacher–student interaction: A decade of research. *Educational psychology review*, 22(3), 271-296.
10. Jumaat, N. F., & Tasir, Z. (2014, April). Instructional scaffolding in online learning environment: A meta-analysis. In *2014 International Conference on Teaching and Learning in Computing and Engineering* (pp. 74-77). IEEE.
11. Grant, H., & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology*, 85, 541-553.
12. Carnegie Mellon, Eberly Center for Teaching Excellence. The educational value of course-level learning objectives/outcomes. Retrieved May 15, 2014:
<https://www.cmu.edu/teaching/resources/Teaching/CourseDesign/Objectives/CourseLearningObjectivesValue.pdf>
13. Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.
14. Van der Kleij, F. M., Feskens, R. C., & Eggen, T. J. (2015). Effects of feedback in a computer-based learning environment on students' learning outcomes: A meta-analysis. *Review of educational research*, 85(4), 475-511.