How to Build a Course Scaffold

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Any number of specific pedagogical strategies, large and small, can fall under the umbrella of scaffolding. All function within a larger framework requiring that instructors: (1) understand their students' current abilities, (2) commit to regularly communicating and interacting with their students (this involves reciprocal feedback), and (3) structure activities, lessons, and assignments so that students are given the greatest support when they are beginning a novel task and increasing independence as they become more proficient.

Examples of commonly-used scaffolding strategies:

- Give clear, step-by-step instructions
- Give feedback and allow revision (multiple times if possible!)
- Utilize reflective writing to support learners' metacognition
- Ask learners questions
- Give hints and clues
- Show learners how to do something before asking them to do it
- "Think out loud" as you demonstrate a task, especially if you record yourself performing the task
- Provide clear rubrics
- Provide examples of finished work to serve as a model
- Include your own notes or highlights in the readings you assign
- Discuss the steps to problem solving
- Have students work in groups to solve problems (facilitated by instructor!)
- Peer-to-peer feedback

There is a rich scientific literature on instructional scaffolding, both in person and online. Dig into the scholarly work in the references included with this page. Here are a few examples of useful strategies to get you started:

Essential Steps for Building a Course Scaffold

#1 Break complex assignments down into their component skills

First, think about what it is you want students to do and then think about all of the steps that go into doing this well. For example, in order to write a research paper, students need to be able to:

- Formulate a research question
- Know where and how to find research papers
- Read, summarize, and evaluate these research papers
- Draw general conclusions by synthesizing information across multiple studies
- Make sense of contradictory findings
- Etc. etc. etc.

Think carefully about whether your students (*all* of your students) have mastered these component skills before giving them a high-stakes summative assessment requiring a higher-level skill. Adopting scaffolding would likely involve creating multiple, smaller and more focused assignments that allow students to master these sub-tasks before moving on to the more complex integrative task. For example, you have assignment #1 be about formulating a research question, assignment 2 about finding a research article…etc.

Hint: Even finding where on your Blackboard page you've posted an assignment might be a component skill. Don't assume that your students all have the digital fluency to navigate this! Outlining these steps clearly in your instructions or showing students how to do this can go a long way.

#2 Focus students' cognitive effort on the *specific* skills you want them to practice

Set up your assignments, activities, and readings so that students spend their energy on *exactly* what you want them to be able to do and nothing else. If you want them to be able to read and summarize a research article, then maybe don't make them also have to find an appropriate article. Give them a list of articles to choose from instead. If you want your students to be able to apply a course concept to real life, then maybe don't grade them on their ability to write in a fully formal, professional style. Designing your course assignments to build on one another helps a lot with this, because earlier activities and assignments can help ensure you that your students have the component skills to then apply in future assignments.

Hint: Guided notes can be a great strategy for this. In your instructions for the assignment, you may add notes or hints for students about *where* to find relevant information for each step.

#3 Provide direct instruction in *process* as well as content or outcome

Another important aspect of scaffolding involves providing direct instruction in and modelling of the *process* of learning and practicing a new skill. As experts in our areas, we may complete a number of tasks with little thought as to the way we go about it – yet this procedural knowledge is essential for novice learners. There are many ways to make the process of learning explicit. Here are a few examples you might consider:

- Provide written or verbal step-by-step instructions
- "Think out loud" about your decision-making process (e.g., this is how I go about determining whether this is a valid and reliable study…)
- "Coach" students through the process by asking them to make predictions, self-reflect, or plan out a course of action in relation to the process of learning (e.g., what challenges might come up for you? How might you meet that challenge? What might you have done differently here?)
- Guide students in planning. Not all students will have the knowledge of how to effectively plan ahead for big projects. You can help to scaffold this planning by making each component of a larger assignment due at a different time, so students can easily see the order in which each step should be completed and how the steps builds on one another.
- In addition to asking students to come up with an answer, you might also ask them to explain how they got that answer (e.g., where did you find it, why did you look for the answer there).
- Scaffold challenging readings by giving students guiding questions both before and after the reading to assist them in identifying the most important aspects of the material.
- Do a syllabus or Blackboard "scavenger hunt." Award students extra credit for identifying where important information is and taking a screen shot.
- A common problem in my field is students' fear of statistics when reading research. I explain to students that a lot of faculty members have this problem too – the field of statistics moves so fast, that we aren't always knowledgeable about the analyses an author is using. However, a good writer will explain their statistics in "plain English" too – and I walk them through some examples.

All of these practices should be complemented by regular feedback and efforts to foster a safe and supportive classroom environment (e.g., don't assign practice tasks a high-stakes grade).

Hint: Beginning a class by having students write about their goals for the course, challenges they anticipate, and strategies they might use for pushing through those challenges can be a great way to help students become more aware and take ownership of their learning process right at the outset.

#4 Give *repeated* opportunities for feedback and revision

Reciprocal dialogue between instructor and student (and/or between students) is an essential component of scaffolding. The value of this dialogue is supported by research. ***One of the most consistent instructor-driven factors promoting student engagement and achievement in online learning is regular communication with the instructor*** (Martin & Bolliger, 2018; Martin, Wang, & Sadaf, 2018; Young, 2006). Feedback doesn't have to be long or in-depth to be impactful, but it should be prompt and actionable (i.e., something that student can respond to). Through the use of hints/clues, asking pointed questions, making suggestions, and identifying missteps, the instructor can encourage students to think in new ways, beyond what they might have thought of without prompting. It may take several rounds of feedback and revision before students are able to master a particular task, so be sure to work this time into your course schedule.

Hint: Use a "feedback bank" – or a collection of common comments you provide on students' work and copy-and-paste them (with adjustments as needed) in order to cut-down on the time it takes to give feedback.

References

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning, 22*, 205-222.

Martin, F., Wang, C., & Sadaf, A. (2018). Student perception of helpfulness of facilitation strategies that enhance instructor presence, connectedness, engagement and learning in online courses. *The Internet and Higher Education, 37*, 52-65.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*, 89-100.

Young, S. (2006). Student views of effective online teaching in higher education. *The American Journal of Distance Education, 20*, 65-77.

Additional Resources:

Rovai, A. P. (2007). Facilitating online discussions effectively. *The Internet and Higher Education, 10*(1), 77-88. DOI: 10.1016/j.iheduc.2006.10.001

- Both describes a conceptual framework and provides practical strategies for facilitating online discussions.

Schutt, M. (2003). Scaffolding for online learning environments: Instructional design strategies that provide online learner support. *Educational Technology, 43*, 28-35.

- Great overview of evidence-based instructional design approaches that provide scaffolding.

https://coi.athabascau.ca/

- The Community of Inquiry framework for online learning is one of the most highly research-supported conceptualizations of effective online pedagogy. This pdf is a brief overview with links to related resources

Dabbagh, N. (2003). Scaffolding: An important teacher competency in online learning. TechTrends, 47, 39-44.

- Super brief introduction to scaffolding including a great figure outlining ways to apply scaffolding techniques using online course modules.
- You can find more research from this framework in this book:
    - Dabbagh, N., Marra, R. M., & Howland, J. L. (2018). *Meaningful online learning: integrating strategies, activities, and learning technologies for effective designs*. Routledge.

McLoughlin, C. (2001). Inclusivity and alignment: Principles of pedagogy, task and assessment design for effective crosscultural online learning. *Distance Education, 22*, 7-29.

- Excellent overview of strategies for ensuring culturally inclusive pedagogy online

https://www.chronicle.com/interactives/advice-online-teaching

- Advice about online teaching from *The Chronicle of Higher Education*

Other websites with information about scaffolding online learning in higher ed:

https://www.facultyfocus.com/articles/online-education/scaffolding-online-student-success/

https://ctl.wiley.com/scaffolding-learning-in-the-online-classroom/

https://www.pearsoned.com/scaffolding-way-engaged-class/