Design Scaffold for Creating an Online Interactive Practice Activity

*The “doer effect” is an association between the number of online interactive practice activities students’ do and their learning outcomes that is not only statistically reliable but has much higher positive effects than other learning resources, such as watching videos or reading text. We also provide generalizability [sic] evidence across* **four different courses involving over 12,500 students** *that the learning effect of doing is about* **six times greater** *than that of reading. (*[*Koedinger, McLaughlin, Jia, and Bier*](https://pslcdatashop.web.cmu.edu/DownloadPaper?fileName=LAK2016-Koedinger-etal-revised.pdf&fileId=10668&datasetId=863)*, 2016. Abstract. The emphasis in original.)*

Keodinger and colleagues are clear that for “doing” to have a learning effect six times greater than reading or watching videos, students must engage in a very specific form of doing. Their findings are centred around the use of “online interactive practice activities (OIPAs).” These OIPAs:

* are aligned with learning objectives,
* are embedded in the course content,
* provide opportunities for students to test their understanding of concepts and to practice skills,
* take various formats (e.g., multiple-choice questions, interactive simulations, drop and drag, matching, and other options),
* target common student misconceptions or areas of confusion,
* deliver corrective feedback (e.g., correcting student misunderstandings when an incorrect answer is selected),
* deliver reinforcing feedback (e.g., explaining why correct answers are correct),
* deliver immediate feedback as-needed (e.g., when a selected answer is incorrect),
* deliver immediate feedback as-requested (e.g., in the form of a hint).

The design scaffold below will help you gather all the information needed to create an online interactive practice activity. This information can then be used to design the actual interactivity in H5P.

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| **What learning outcome will this OIPA target?** |
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| **Exactly where in the book should this OIPA be embedded?**  For maximum effectiveness, the OIPA should be placed close to the content that deals directly with the specific learning outcome identified (not at the end of a chapter). |
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| **What question or activity could students engage with in order to determine whether or not they have mastered this learning outcome?**  This question or activity should be designed to help students discover if they are making a common mistake or have a common misunderstanding. See Creating Good Multiple Choice Questions for more information on crafting a good question. |
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| **What answer options should be presented to the student?** Incorrect answer options should reflect the most common mistakes students make or the most common ways students fail to understand the topic. In other words, students who misunderstand should see an answer option they believe to be correct. See Creating Good Multiple-Choice Questions for more information on crafting a good question. |
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| **What feedback should be provided to students who choose the answer options above?**  For the correct answer, create feedback that explains why the answer they chose is correct. For each incorrect answer option, create feedback explaining the mistake or misunderstanding that would have led a student to choose that option. Then provide feedback that explains why the correct answer is correct. Provide a hint as to what the correct answer might be. See Creating Formative Feedback for more information. |
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