

Facilitating Experiential Learning in Higher Education






Teaching and Supervising in Labs, Fieldwork, Studios and Projects

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extract from
Chapter 6 Explaining and demonstrating to students in practical settings

■ **TABLE 6.1** The five steps of the LOAFS structure for explanations

	Lead-In	Serves as your <i>hook</i> to catch students' attention and makes the connection with what your students know, value, or find interesting.
	Objectives	Makes your intentions for student learning explicit and clarifies your expectations so that students know where you want to bring them.
	Active processing	Engages your students in acquiring and processing information actively. Includes practice activities so that they structure new knowledge and start developing their skills.
	Formative assessment	Assesses the learning of your students in light of the objectives you have set for the lesson. Provides useful feedback to both you and your students about their learning (what is learned and what causes difficulties).
	Summary	Consolidates and integrates the lesson. Broadens the perspective and helps students make links to other concepts and contexts to facilitate transfer.

MODELLING THINKING IN DOCUMENT FORMAT – WHAT YOU THINK VS. WHAT YOU WRITE DOWN

It may be that many of the explanations you provide to students are in written format. Lab protocols are often written in advance and, in field practice settings, students may rarely be all together in a class and your primary means of communication may be in writing. Text-based resources that you prepare for your students should incorporate many of the elements discussed above. A good written resource includes not only how to perform a procedure but also explains the underlying expert thinking of how to figure out that this is an appropriate procedure for a given situation. Structuring your written explanations to explicitly include both the procedural steps and the thinking that accompanies the gestures will help students recognise the thinking processes that are required of them.

CASE STUDY 6.1.C – ROCKIN’THE EXPLAINING

Read this case study and complete the analysis questions below.

Ghali, on the geology field trip with his students, explains *how to* perform the acid test.

Okay, can everyone hear me? I'm going to demonstrate how to do the acid test. You should be ready to perform the acid test on a sample yourself when I'm done explaining. This is a really simple test that you will use frequently in your field work, starting today and continuing throughout your career, so please ask me if there is anything unclear.

Ghali picks up a fist-sized rock. "Looking at this rock, what possible types of rock could it be?" Students call out a few suggestions. "Good, I heard several different kinds of carbonate minerals. And the acid test is a good first step to figuring out which kind, based on the degree or vigour of the reaction with hydrochloric acid".

Ghali first completes the acid test procedure once in real time. He then directs students to page 6 of their field guide and repeats the procedure, providing a detailed, step-by-step commentary to accompany his actions of applying a drop of acid to the surface of the rock. "OK, looking at the table on page 7 of your field guide, how would you characterise the reaction that we just saw?" A few students make suggestions.

For a *very weak* reaction, you would typically need a magnifying glass to see the CO_2 produced. So *weak* is a better characterisation. Then you consult the second table on page 7 to see what kinds of rocks have a *weak* reaction. What are our options?

Again, students make a few suggestions.

These are good ideas. Let's do the reaction again, to see if we can get more detailed observations. I'll just break the rock to get a clean surface. Ok, just call it out, what is the first step I need to do to repeat the acid test?

The students call out the procedural steps, which Ghali performs or questions if appropriate. This time however the acid produces a vigorous bubbling reaction.

Wow. That doesn't look like the reaction from the first time at all. Make a quick pair with a neighbour and together review the steps

I took for each of the trials. I'll give you two minutes to discuss – what was different?

Ghali intentionally looks down at his notes to signal to students that he is done talking and that they should start discussing with a neighbour. Despite keeping his eyes down, Ghali remains attentive to the discussions around him and after about 1.5 minutes there is a lull in the discussions. "OK, great. Let's come back together again. We will go through the procedure step-by-step, and you let me know when anything was different". Ghali has students call out the steps in order, again, but this time he does not need to make any corrections. "Excellent, you have all the steps. But what was different? Which test would you trust more, the first test or the one after I broke the rock open?" Monique's hand shoots up, "The second one! You broke the rock open and used a fresh surface that hadn't been exposed to weathering!" Ghali smiles, "Right, so now you are ready to go and do the acid test yourself. And don't forget to use a fresh surface to get reliable results!"

Case analysis questions

Write down and keep your answers to the following questions; suggested answers can be found at the end of the chapter.

1. What are the different actions that Ghali asks students to do during his demonstration?
2. Ghali uses some of the elements of the LOAFS structure. Can you identify which elements? In which order does he use them?

* This case is a fictionalised account of teaching experiences.

CASE STUDY 6.3 – EXPLAINING HOW TO GIVE FEEDBACK TO PHYSIOTHERAPY CLIENTS

Read this case study and complete the analysis questions below.

Vivek's* physiotherapy students give a one-day free clinic at a local community centre each year. Vivek has noticed that his students often fail to consider the precarious living conditions of the clients, many of whom live in shelters or on the street, and consequently make inappropriate recommendations (e.g. recommending daily hot baths). Another recurrent issue is not giving clients adequate feedback to enable them to keep working on their exercises independently, since they are unlikely to have another opportunity to see a physiotherapist. These concerns have prompted Vivek to create a few extra resources to help his students prepare, including a short online video about giving effective feedback. Table 6.2 presents some of his ideas for the video on feedback.

* This case is a fictionalised account of teaching experiences.

Case analysis questions

Write down and keep your answers to the following questions. Suggested answers can be found at the end of the chapter.

1. Review the two options for each phase of LOAFS presented in Table 6.2, noting the strong and weak points in terms of what students can learn from the explanation.
2. How could you improve Vivek's outline so that it better models expert thinking?

■ **TABLE 6.2** LOAFS structure for a video on giving effective feedback

Phase	Option 1	Option 2
Lead-in	<p>"I love being a physio. But do you know what I hate? When clients don't do their exercises between sessions with me. So it was a light bulb moment for me when I realised that how I gave them feedback during a session could have a big impact on my clients actually doing their exercises. I now see giving good feedback to clients as an important professional skill".</p>	<p>"It is great that so many of you volunteer for this clinic each year. It is a great way to give back to some really disadvantaged people in our community. This video will help you make a bigger impact from your time and therefore on the health of these people who live in difficult conditions".</p>
Objective	<p>"I want you to</p> <ol style="list-style-type: none"> 1. be aware of clients' situations, to see them as people in their environments, and not simply muscles and tendons. 2. give clients process-focused feedback that is structured to increase retention by people who have experienced trauma". 	<p>Show slide: at the end of this video, you should be better able to</p> <ol style="list-style-type: none"> 1. Target the level of difficulty to motivate clients to invest effort that will help them heal. 2. Provide monitoring skills that enable clients to recognise when they are doing an exercise correctly and to continue to improve independently.
Active processing	<p>"Pause this video and make a list of five or more key ideas about feedback, recalling concepts from class. Restart the video when you are done".</p> <p>Vivek briefly reviews the key ideas about feedback, using cases from last year's clinic to illustrate.</p> <p>"Now that you've heard from me, pause the video again and review your list above. Complete or revise as necessary in order to create a good memo about feedback for yourself".</p>	<p>"As you watch this video of an interaction between a physio and a client, make notes about what you notice about the client (both physical and emotional states). Pause whenever you need. Then write some feedback as you would say it to the client, before starting the video again".</p> <p>Vivek reruns the video of the interaction, pausing when necessary, to describe what he sees and how he would give the client feedback.</p>

Feedback	<p>Online quiz – five cases with background about the person and a video of them doing a physio exercise. Students choose the best feedback (multiple choice) to give the client in each case.</p>	<p>Video of an interaction between a physio and a client – students revise the script to improve the feedback given to the client and submit to Vivek.</p>
Summary	<p>Vivek reviews key points, making connections to other concepts like deliberate practice.</p>	<p>Return to objective slide. Tell students to pause and write their own summary.</p>
