

## Strategies for Reflection

Science of Learning

Best Practices for Teaching and Learning

We have discussed how learning research can inform your teaching and course development. Now let's discuss some of the strategies that you can implement to document and reflect on whether your efforts implementing these strategies have worked.

As we have previously mentioned, MUD cards can provide student feedback on individual sessions and can show you whether your teaching strategies and course design seem to lead to increased understanding. In addition, they can clarify what is difficult for students to know and do and identify misconceptions that might deserve more attention.

At the end of each class, take a few notes on what you think worked and did not work. These notes can help you modify the sections and approaches that did not work so well. Ask a fellow instructor to come and observe one of your lectures and give you constructive feedback.

Lastly, at the end of the course, spend some time thinking and documenting what you think worked and what you think did not. Be sure to look at the course design, teaching behaviors, and instructional strategies and assessment materials. The implementation of these reflection strategies will provide a rich set of data, which you can then use to improve your own future teaching in courses.

In this session, we discussed strategies for implementing learning science research findings to improve our teaching and increase student understanding. Specifically, we discussed how understanding how people learn can allow us to support our students' ability to construct meaning. We also discussed how prior knowledge is the most important factor for how and what students learn. Knowing what our students already know allows us to adjust our teaching and address misconceptions more effectively.

We looked at how experts and novices differ significantly in their approaches to problem solving. Experts organize hierarchical mental frameworks allows them to easily retrieve and apply information to new contexts. Illustrating expert thinking can allow your students to consciously emulate expert problem-solving strategies. Lastly, we explored how incorporating strategies for reflection will allow you to make conscious changes to improve your teaching and courses.

In the post-session assignment worksheet on the course website, there's a table with eight findings about how people learn. Choose four of the eight findings, and 1, write a short description of the finding, and 2, provide examples of how you have used this finding in your teaching or could use it in the future.