Introduction

Science of Learning
Best Practices for Teaching and Learning

Welcome to this session on The Science of Learning. First, before we begin this session, take a moment to introduce yourself to your nearest neighbor. We hope that you'll be able to work in small groups throughout the rest of the course. Pause the video here and share with your neighbor your name, discipline, and motivation for taking this course.

Welcome back. Throughout the course, we will periodically ask you to pause the video and complete a short activity. It is important that you do these activities, because they will help you better understand the concepts we're covering in the course. Let's try this out. We would like you to watch this short video before we continue. Pause the video here, and follow the link on this slide to watch a short video.

In the whodunnit video you just watched, did you notice any of the changes in the room prior to the section in the video when they were being revealed? If you did not, you're not alone. It is hard to notice things that we are not aware of. This video illustrates in many ways some of the ideas we will discuss during today's session.

Learning depends on what the learner already knows and the context in which learning takes place. New views of the learning process have emerged from cognition research. Our understanding on the nature and context of learning have indicated a shift from a teacher-centered to a student-centered education. These research findings have a huge implication for how we teach, and more importantly, what we ask our students to do.

The goal of this session is to use research on learning and cognition to inform classroom practices and teaching. During this session, we will look at some key research findings from a large body of literature and discuss how they can be translated into classroom practices. The research findings we will cover in this session will continue to reappear throughout the course. We will demonstrate how they inform the way we teach and also the way we design our courses, lectures, instructional activities, and assignments.

In most disciplines, we begin by determining what research has found out about the topic of interest. Then we use the known research findings to inform our approach. Our personal experiences as learners can sometimes give us the false sense that we know how our students learn. In this course, we will take a different approach to teaching. First, we will discuss what is known about how students learn, and then we will work to implement these findings in all aspects of teaching and course design.

The learning objectives for this session are that by the end of the session, you should: be able to explain current theories of learning and cognition that explain how students learn; apply cognition and learning research to improve students' learning in your teaching; implement strategies that allow you to reflect on your teaching and evaluate whether or not you're being effective.

This lesson will be organized into two parts. During the first part of the session, we will summarize current learning theories and explore strategies for how to implement these in your classrooms. Most of the time during this session will be spent on this part. During the second part of the session, we will look at strategies for self-reflection.

Let's begin with a reflection on the pre-session readings. Which readings are most relevant to you and your teaching, and why? Is there a particular reading that challenged your view of how students learn? And why?

First, think about the answers to these questions on your own for a few minutes. Then turn to your neighbor and share and discuss your responses to these questions for approximately 10 minutes. Write your individual answers to these questions on the online discussion forum.