

# Introduction

## Interactive Teaching and Active Learning Best Practices for Teaching and Learning

Welcome to session five on interactive teaching and active learning. In this session, we will first have an introduction to this session, then discuss the benefits of one-on-one teaching and active learning methods that can be incorporated into your own classroom.

These active learning methods are grouped into three categories of activities, those that will take less than two minutes, those that will take 2 to 5 minutes, and those that will take 5 to 20 minutes of your class time.

We're going to learn how to juggle in this session. There is an important equation that describes juggling that will be helpful for us to know while learning how to juggle. This is the equation.  $F + D \times H = V + D \times N$ .

In this equation,  $F$  is equal to the time a ball is in the air.  $D$  equals the time a ball is in a hand.  $V$  equals the time hand is vacant.  $N$  equals the number of balls. And  $H$  equals the number of hands.

Now that we have covered the equation, let's juggle. Here's Brandon, our first volunteer. Have you studied the equation?

OK, let's see.

Uh, uh, uh. Maybe you should go down and study some more. Let's have another volunteer. Here is Barry. Hopefully, he has studied a little bit more.

Oh, definitely.

Oh, there you go. Clearly, you did a good job studying. All right. Why did I show you the slide about how to juggle? Often when we teach, we expect that students will be able to do things as a result of our teaching.

This is especially relevant in the sciences but does apply to other fields, too. However, the way that we teach may not really support students' retention and transfer of the information from our classes to another class or to real life. In this session, we are going to discuss how we can adjust the methods used in our classrooms to help students' retention and transfer of knowledge.

Ronald Berk, in the book *Professors are from Mars, Students are from Snickers*, says that students learn 10% of what they hear, 30% of what they see, 60% of what they hear and see, 80% of what they hear, see, and do, and 100% of what they hear, see, do, smell, feel, taste, and purchase on credit.

Students learn more effectively when all of their senses are engaged. In this session, we will discuss how we can incorporate active learning methods to engage students in the learning process. The goal of this session is to illustrate how to incorporate various active learning techniques and, of course, to increase students' understanding and ability to transfer knowledge to new situations.

The learning objectives for this session are, that by the end of this session you will have considered ways to, one, apply relevant research on active learning to your teaching, two, discuss the impact of active learning exercises in the classroom and evaluate the time requirements for different active learning strategies and, three, develop activities and/or techniques that will help students achieve the learning objectives in your course.

Let's have a discussion now to share the type or types of interactive techniques that you have encountered, either as a student or as an instructor yourself. Share your experiences on the online discussion forum. Be sure to also include an analysis of the pros and cons of those interactive techniques.