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Session S111

Make It Stick

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Introduction

Learning How to Learn: Powerful mental tools to help you master tough subjects
University of California, San Diego
Characteristics of Unsuccessful Students

- Wait until the last minute; procrastinate
- Use crutches when studying
- Do not prepare for class
  - Do not complete homework
  - Do not read textbook
  - Do not take notes in class
  - Do not review notes
- Do not persist; give up too easy
- Lack confidence
- Do not have a vision
- Uninterested in the class
Goals

- Present strategies to implement in course design and delivery to improve student retention of material

Strategies – Course Design
Desirable Difficulties

Spaced Repetition

Typical Forgetting Curve for Newly Learned Information
Interleaving

Blocking vs interleaving

Retrieval Practice (Testing Effect)

• Counteracts Illusion of Competence/Mastery
Desirable Difficulties

Other Effective Strategies

• Handwriting

• Previewing text prior to learning new topic

• Expressing new material in your own words and connecting it with prior knowledge
Strategies - Delivery

Characteristics of Teachers

• High expectations of our students
• Concerned about delivering content
• No time to teach proper study skills
• Experts
We are Cursed

Difficult for us to think like a novice learner

“There’s really no need for confusion. Part 95 of section 33 of article Q in the formula quite clearly states…”
Become a Novice Math Learner

The Graph of Sine
Unit Square Problem

Other Shapes?
Other Shapes for the Season?

Make Your Lectures Stick

Simple — cause them to see the main point
Unexpected — cause students to pay attention
Concrete — cause them to understand and remember
Credible — cause them to agree/believe
Emotional — cause them to care
Stories — cause them to act
Sample Activities

- Choose black and get chocolate
- Find your county/state population model
- Nielsen Data
- Growth of Google /Internet

Bibliography

- Oakley, Barbara A. *A Mind for Numbers: How to Excel at Math and Science (even If You Flunked Algebra).*
Bibliography (continued)

