The Student Cognition Toolbox: Empowering Students to Become Better Learners

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Acknowledgments

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University of New Hampshire
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CMU Collaborators
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Agenda

Choosing a Cognitively-based study strategy
SCT Study Strategies
General SCT Module template
Tour: Student Cognition Toolbox
Using the SCT in your courses
Wrap Up and Q & A
CHOOSING A COGNITIVELY-BASED STUDY STRATEGY
How do we “activate” and enhance student learning?

It depends . . .
It Depends?

What kind of knowledge does your student need to attain?
• Facts?
• Concepts?
• Problem-solving or procedural skills
• Complex Principles?

What kind of learning processes is required for your student’s learning objective?
• Learn facts and associations?
• Learning rules, classifications, and categories?
• Problem solution steps
• Learn principles, sense making, and deep comprehension?

What kind of study strategy will you recommend and use to promote learning your objectives?
• Quizzing?
• Self-explanation?
• Worked examples with self-explanation?
• Elaborative interrogation
STUDENT COGNITION TOOLBOX STUDY STRATEGIES
SCT

Self-explanation

Elaborative Interrogation

Worked Examples

Distributive Practice (Spacing)

Test Enhanced Learning

Interleaved Practice
GENERAL SCT & MODULE TEMPLATE
Study Behavior Inventory (pre)

Part 1: Engagement in the learning activity
- Exposure of material to be learned
- Utilization of learning strategy during reading

Part 2: Study Strategy Lesson
- Exposure to presentation on the study strategy
- Practice using strategy in a variety of contexts
- Assessment of how well they learned the study strategy

Study Behavior Inventory (post)
## Fall 2019; Spring 2020; Fall 2020

~4500 UNH students from a variety of courses

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<thead>
<tr>
<th>Biology</th>
<th>Political Science</th>
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<tr>
<td>Chemistry</td>
<td>First-year Writing</td>
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<td>Psychology</td>
<td>Mythology</td>
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<td>Water Quality</td>
<td>Phlebotomy</td>
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The Student Cognition Toolbox

Carnegie Mellon University

Open Learning Initiative
Transforming higher education through the science of learning.
Moving Forward

Default SCT

Additional Modules
- Prediction Based Learning
- Dual Coding

Discipline-specific SCT ‘Courses’
- Statistics
- Chemistry
- Biology
- A&P
Implementation of the SCT:

- Independent Learners
- As a text in a student academic success course
- As optional or required text in an academic course
Two versions of the SCT are now available on the Open Learning Initiative platform (https://oli.cmu.edu) and are now ready for review and adoption

1. Open and Free
   https://oli.cmu.edu/courses/student-cognition-toolbox-open-free/

2. Instructor Initiated
   https://oli.cmu.edu/product-category/student-success/
Thank you

Questions?
Comments?

Q & A Moderators
Lauren Kordonowy & Jennifer Calawa