Self-Regulated Learning: Way Beyond Study Skills

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Outcomes for You

You will be able to:

- Explain what self-regulated learning (SRL) is and how it enhances student learning.

- Induce your students to practice SRL.

- Adapt and integrate SRL activities and assignments in your courses.
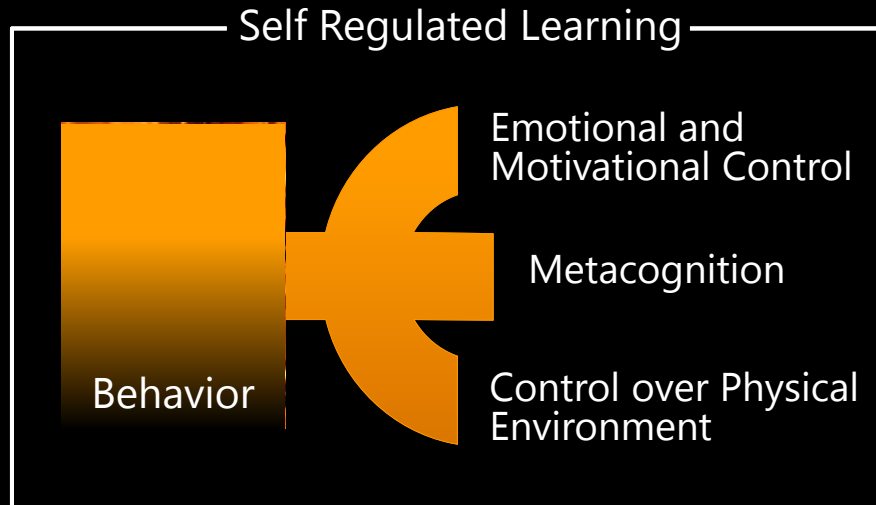
Most students think …

- Learning "happens" or doesn't happen to them.
- Learning in college should be easy.
- If it's not happening:
  - It's the instructor's fault, OR
  - It's hopeless; they weren't born with the talent.

The Antidote:
Self-Regulated Learning

= the conscious planning, monitoring, and evaluation of one's learning in order to maximize it.

Multi-dimensional, multi-stage process

Dimensions of SRL

Self Regulated Learning

Behavior

Emotional and Motivational Control

Metacognition

Control over Physical Environment

The Learner's Questions
Bases of activities and assignments

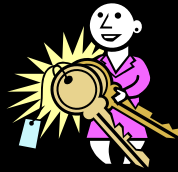|	Metacognition	Meta-emotional	Environmental
BEFORE Planning or Forethought			
DURING Self-Monitoring or Performance/ Volition Control			
AFTER Self-Evaluation or Self-Reflection			

Benefits to Students

Learning → performance

More and deeper thinking
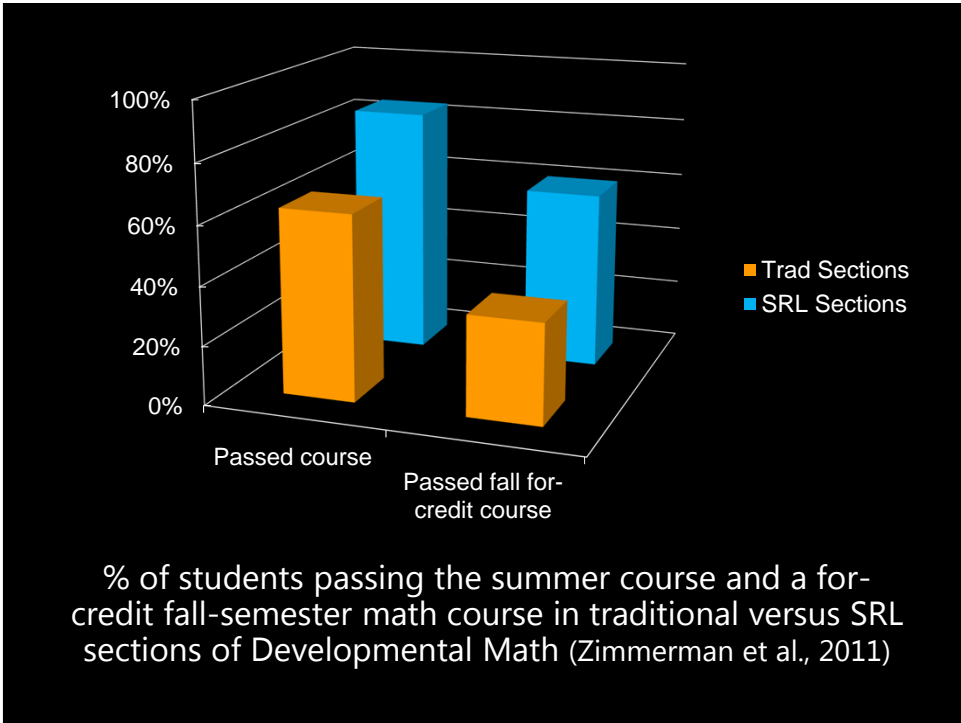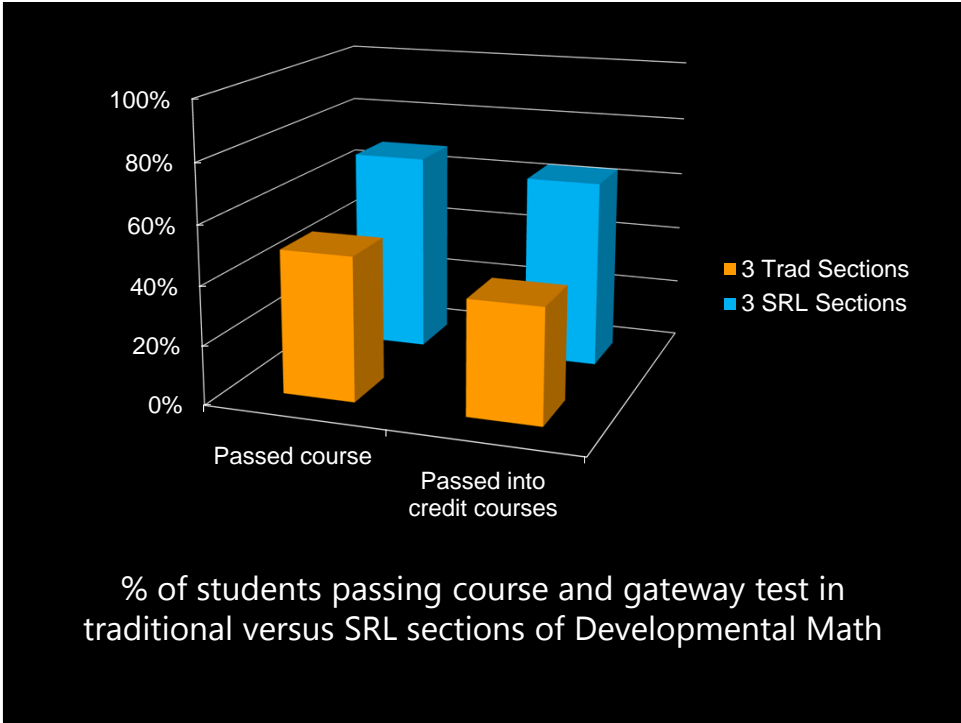
Conscious focus on learning

Self-Efficacy

Motivation
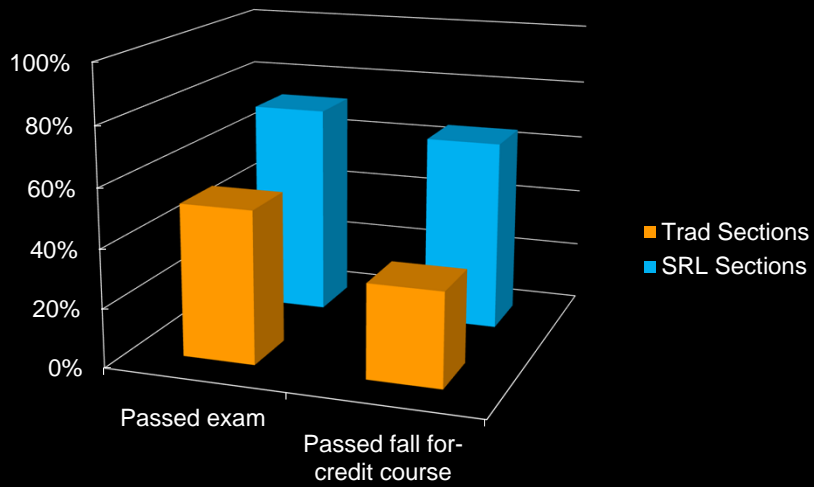
Professionalism & Adult Success

Hattie's (2009) meta-meta-analysis

- teacher clarity - effect size of .75
- getting feedback - .73
- spaced v. mass practice - .71
- **metacognitive strategies** - .69

> mastery learning, cooperative learning, time on task, computer-assisted instruction, and teaching students test-taking strategies

% of students passing course and gateway test in traditional versus SRL sections of Developmental Math

% of students passing the summer course and a for-credit fall-semester math course in traditional versus SRL sections of Developmental Math (Zimmerman et al., 2011)

% of students passing gateway exam and a for-credit fall-semester writing course in traditional versus SRL sections of Developmental Writing (The SRL Project website)

SRL Activity #1

Awareness-raising one-minute paper: What is (are) the most surprising or unexpected idea(s) you encountered?

Get Students to Practice

You run SRL class activities and make SRL assignments.

Students don't mind – short, low-stress, worth a point.

You don't mind – P/F-graded assignments; P = complete and proper length.

Results are evident to all.

SRL Activities & Assignments

- Start of Course
- Reading (video, podcast) "Wrappers"
- Live Lecture "Wrappers"
- Assignment "Wrappers" ("meta-assignments")
- Exam & Quiz "Wrappers"
- End of Course

Start of Course

- Reading and discussion on "learning" and "thinking"

- Goal-setting - "How I earned an A in this course" *

- Self-assessment instrument on meta-cognitive skills *

Start of Course *continued*

- Reflective writing on nature of subject matter (to activate students' prior knowledge & reveal misconceptions) *

- Essay questions on course material *

- Knowledge survey *

* Best to repeat at end of course

Knowledge Surveys

- Series of questions/tasks covering knowledge and skills in a course or unit (from old exams, outcomes, exercises, etc.)
- Answer = *students' perceived ability* to answer question/perform task
- Activate prior knowledge, reveals misconceptions, generates interest

Knowledge Surveys
Examples of Answers

- a) I do not understand the question, I am not familiar with the terminology, *or* I doubt I can answer the question well enough to earn a passing grade.

- b) I understand the question and 1) I think I can answer at least half of it correctly, *or* 2) I think I can find the correct answer within 30 seconds.

- c) I am confident that I can answer the question well enough to earn a passing grade, but no higher.

- d) I am confident that I can answer the question well enough to earn a high grade.

Examples of Answers *continued*

OR
- a) Very confident
- b) Somewhat confident
- c) Not sure
- d) Not at all confident

Accuracy Warning!

Students *over*estimate their abilities and knowledge (except possibly the best students) when they know the *least*.

– Less likely in STEM and health/medical fields because students more likely know they don't understand terminology.

What will you do to enhance students' self-regulated learning skills at the start of your courses?

SRL Activity #2

Take the role of a student listening to a lecture: Write down all the important points that you can recall and any questions you have.

Live Lecture Wrappers

- Periodic free-recall (self-testing)
  1. Students listen to lecture for 10-20 mins. , then close notebook when you pause.
  2. They write down all important points they can recall and their questions, leaving space between the points.
  3. They pair up to compare, fill in, and fine-tune notes.

- "Conceptests" - At end of mini-lecture, display conceptual or application multiple choice item on content.
  1. Students "click in" their answers.
  2. They try to convince neighbors of their answer.
  3. Repeat step 1. ⟹ more correct answers and higher confidence

- Active listening checks
  1. Students listen to 10-20-min lecture for key points (may take notes).
  2. They write 3 most important points, turn in.
  3. You reveal 3 most important points.
  4. Students self-assess their listening.

  Improve listening skills: 1st → 3rd time: 45%→75% of students get points correct (Lovett, 2008)

- Minute paper(s) on day's class:
  - Most useful or valuable thing you learned?
  - Most important point or central concept?
  - Most surprising/unexpected idea?
  - What idea(s) struck you as things you could/ should put into practice now?
  - What stands out in your mind?
  - What helped or hindered your understanding?
  - How does the content connect or conflict with your prior knowledge, beliefs, or values?

Reading (Video, Podcast) Wrappers

- Reflective study Qs
  - most important concepts/principles and what you *don't* understand clearly
  - comparisons/connections to prior learning, preconceptions, existing knowledge framework, other courses
  - affective reactions: attitudes, values, beliefs, emotions
  - one-minute paper(s)

- Self-Testing: Read * Recall * Review

  1. *Read,* then put away book and notes.
  2. *Recall* all you can, and recite it aloud or write it down.
  3. *Review,* for what you misunderstood or forgot.

  – Better immediate and delayed free recall of fact-based passages than rereading and equal to note-taking
  – Less time than note taking
  – Gives learner "deliberate practice," "retrieval practice," and "elaborative rehearsal."
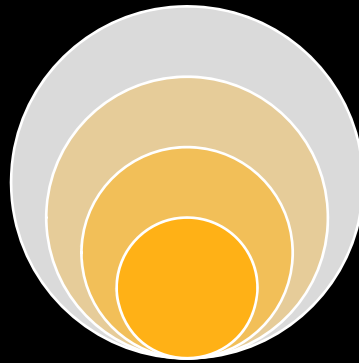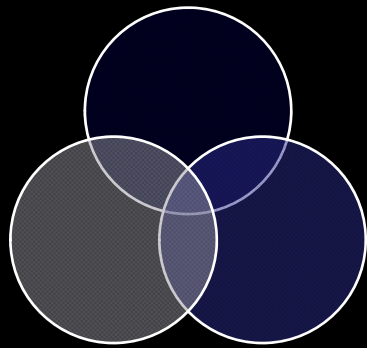
  (McDaniel, Howard, & Einstein, 2009; Roediger & Karpicke, 2006)

- Visual Study Tools (also lecture wrappers)
  - Students actively integrate and structure knowledge themselves – *how we remember long-term.*
  - Lower cognitive load, less working memory, and fewer cognitive transformations than text ⟹ better reading comprehension, deeper learning/conceptual understanding
  - Cue text
  - Cross-cultural

Common Visuals/"Maps"

First stage | Describe action
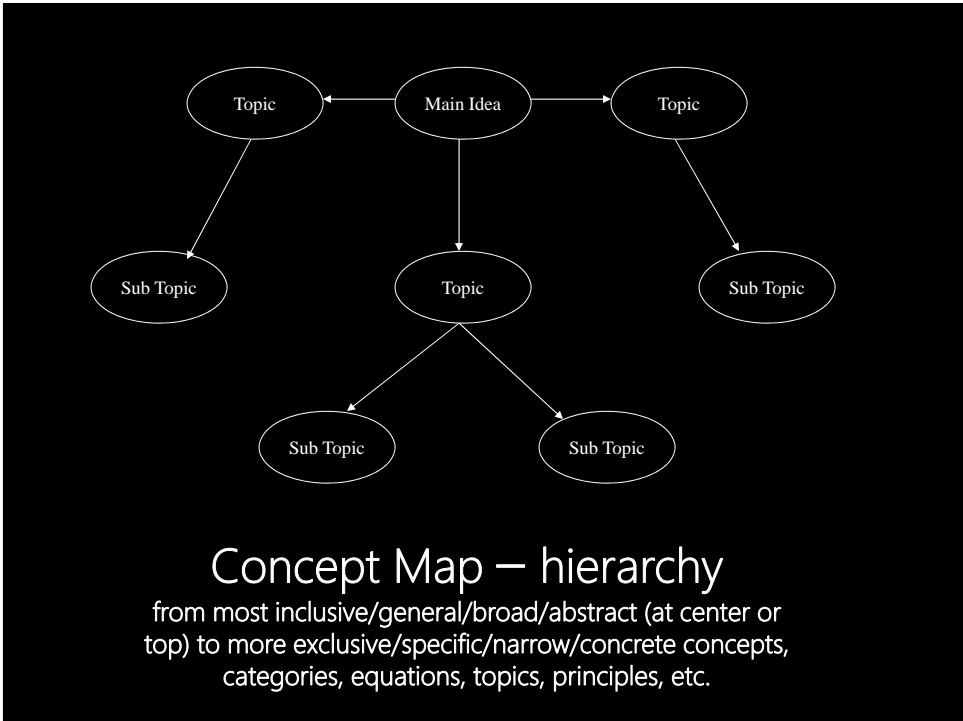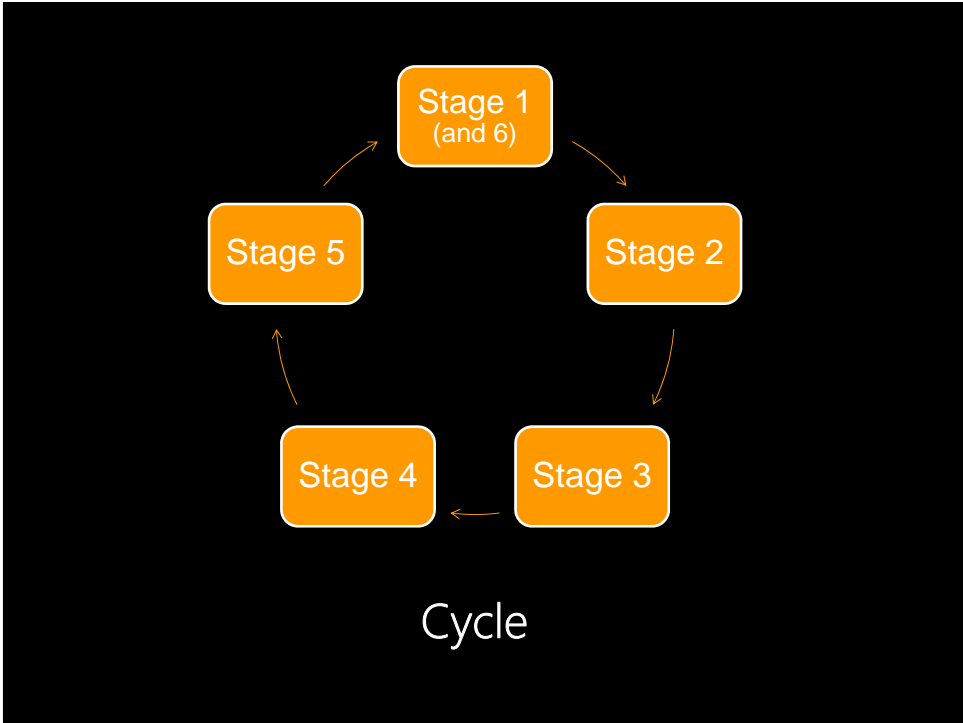Second Stage | Describe action
Third Stage | Describe action
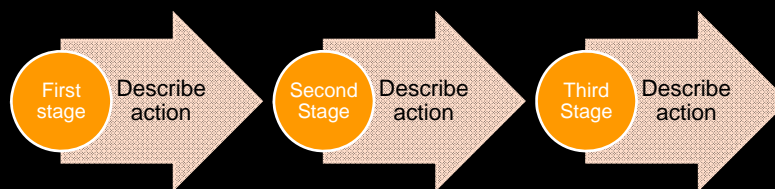
Flowchart – sequence of events or operations; causal or procedural process

Concept Circle or Venn Diagrams –
relationships among concepts, categories,
equations, topics, principles

	Duration (Years or Months)	Causes	How Started	Positive Effects for U.S.	Negative Effects for U.S.
World War I					
World War II					
Korean War					
Vietnam War					
Desert Storm					
Iraq					

Matrix – classify or compare-and-contrast types of X

Cycle

Concept Map – hierarchy
from most inclusive/general/broad/abstract (at center or top) to more exclusive/specific/narrow/concrete concepts, categories, equations, topics, principles, etc.

Mind Map – free association or hierarchy
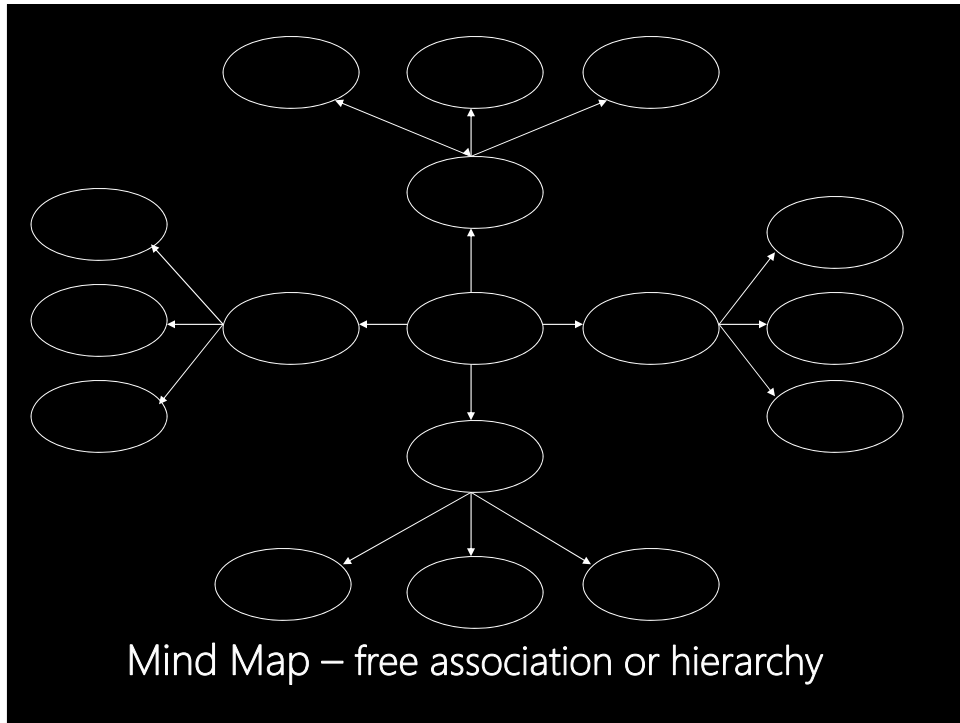
What will you do to enhance your students' self-regulated learning skills in readings and lectures?

Meta-Assignments

- Math-Based Problems
  - "Think aloud" to prepare students for HW: Partners "talk through" and guide solutions.

  - Learn from problem w/ incorrect answer: Write an error analysis and solve similar problem.

- Papers & Projects – as applicable:
  - Process followed
  - Reasoning used to solve problem
  - Self-evaluation of work, progress
  - Paraphrase of your written feedback
  - Revision goals, strategies
  - Value of assignment; skills gained, improved
  - Advice on assignment for next year's students

- Experiential Learning: S-L, field work, simulation, role play (Grade with rubric.)
  - Connect to course outcomes and content
  - Explain and evaluate goals, strategies, decisions, responses to other players.
  - Evaluate goal achievement, strategies, performance.

Post-Quiz & Exam Wrappers

- Reflection on graded exam (Barkley, 2009)
  1. Compare your expected and actual performance.
  2. How to you feel about your grade?
  3. How many hours you studied – enough?
  4. How did you study?
  5. Why did you lose points? Any patterns?
  6. For next exam, set goal and design study game plan. What will you do differently?

- Students re-solve incorrect or similar problems & write out correct strategy.

- "Test Autopsy"– error analysis form; OK to add reflection probes

Question Profile			Reason Answer Was Incorrect			
Question Missed	Points Lost	Type of Question	Carelessness	Unfamiliar Material	Misinterpreted Question	Did not finish

What will you do to enhance your students' self-regulated learning skills in assignments and exams?

End-of-Course

- Letter to next cohort of students
  - How to succeed in course
  - Highlights of course content and skills

- Self-evaluation "How I earned an A – or not"

- Repeat knowledge survey and compare.

- Repeat reflective writing on nature of subject matter and compare/correct.

- Re-write and/or correct errors, poor reasoning, misconceptions, etc. in first-week essays (final exam; grade with rubric.)

SRL Activity #3

Review-and-evaluate one-minute paper about this workshop: What is (are) the most useful or valuable thing(s) you learned?