Engaging Your Students in Self-Regulated Learning

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Outcomes for You

You will be able to:

- Induce your students to practice self-regulated learning (SRL)
- Design and integrate activities and assignments into your courses that will enhance your students' SRL skills, thereby improving their performance on exams, assignments, and class activities.

Self-Regulated Learning Activities and Assignments

- Start of Course
- On Lectures - “wrappers”
- On Readings (podcasts, videos) - “ “
- On Assignments - “ “ (meta-assignments)

- On Quizzes and Exams - “wrappers”
- End of Course
- Throughout course to teach deferral of gratification and avoidance of procrastination

Remember about Grading:

- No grading of in-class activities
- Major experiential assignments and portfolios: grade on a rubric.
- Grade pass/fail: all points for good-faith effort and/or completeness; 0 points for less; maybe have length requirement.

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 *

* *Best to repeat at end of course*

- Reflective writing on nature of subject matter (to activate students' prior knowledge, reveal their misconceptions) *
- Essay questions on course material *
- Knowledge survey *

* *Best to repeat at end of course*

Knowledge Surveys

- Series of questions or tasks on the course material (knowledge, skills) taken from list of course outcomes, old exams, exercises, etc.
- Answer = *students' perceived ability* to answer question or perform task

Examples of Answers

- a) I do not understand the question, I am not familiar with the terminology, ***or*** I doubt that 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 know where 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.

OR

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

Do Students Know What They Do and Don't Know?

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

- Less likely in engineering, scientific, technical, and medical fields because of esoteric terminology.

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

SRL Activity

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.

Activities on Lectures “wrappers”

- Periodic free-recall notes with pairing
  1. Students listen while taking notes (or not) until you pause, then close notebooks.
  2. They write down all important points they can recall and any questions,
  3. They pair up to compare and fine-tune their free-recall notes.

- “Conceptests” - At end of mini-lecture, you display conceptual or application multiple choice item.
  1. Students “click in” their answers (optional: also confidence level).
  2. They try to convince neighbors of their answer.
  3. Repeat step 1. More correct answers and higher confidence

- Active listening checks
  1. Tell students to listen actively for key points.
  2. They write 3 most important points, turn in.
  3. You reveal 3 most important points.
  4. Students self-assess their listening. 1st → 3rd time: 45% →75% of students get all 3 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?

Activities on Readings "wrappers"

- Reflective writing or study Qs on:
  - most important concepts/principles & what you *don't* understand clearly
  - comparisons/connections to prior learning, preconceptions, other courses
  - affective reactions: attitudes, values, beliefs, emotions
  - "minute paper" questions (above)

- Self-Testing: Read * Recall * Review:
  1. *Read,* then put away book, notes.
  2. *Recall* all you can, reciting it aloud or writing it down.
  3. *Review* for what you forgot or misunderstood. Then recall again.

- Better immediate and delayed free recall of fact-based passages than rereading many times
- Equal to note-taking but quicker
- Gives learner “deliberate practice” and “retrieval practice”

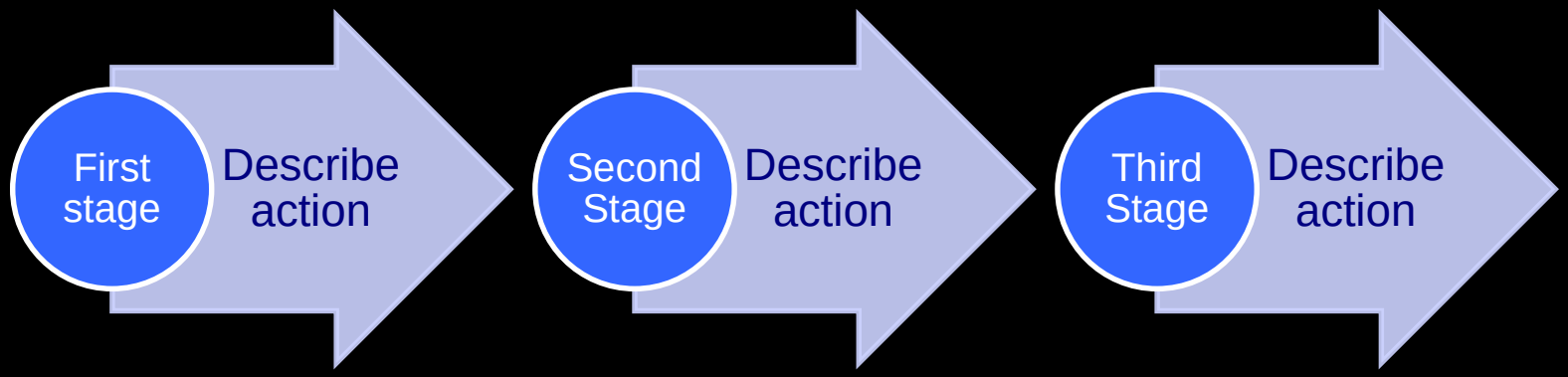
(McDaniel, Howard, & Einstein, 2009; Roediger & Karpicke, 2006)

Schema like Read*Recall*Review

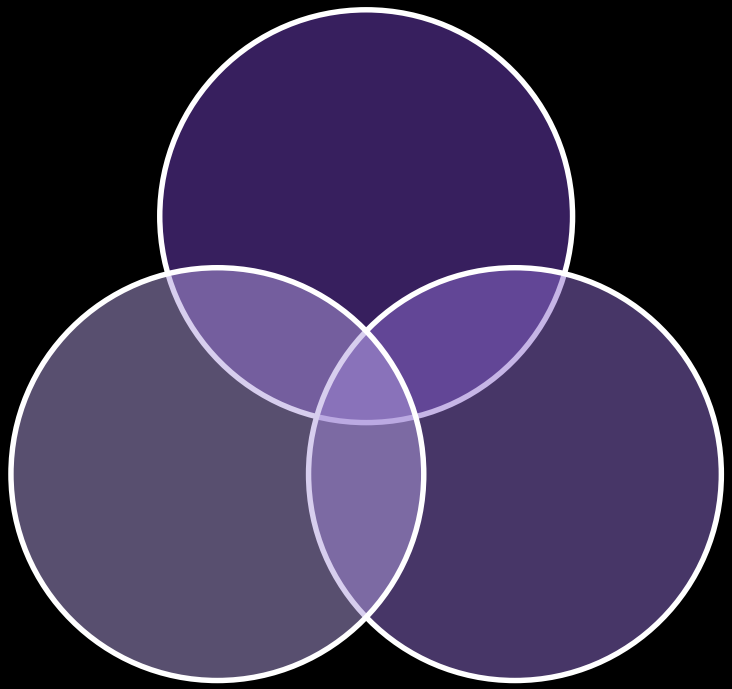
- SQ3R = survey-question-read-recall-review
- PQR3 = preview-question-read-recite-review
- “Mind dump”

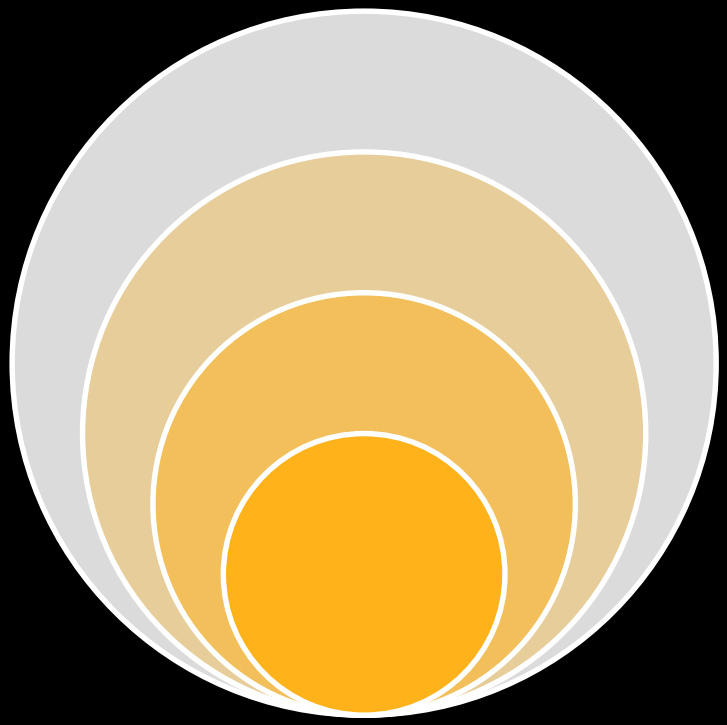
- Visual Study Tools (also lecture wrappers)
  - Students must structure the knowledge – how we remember long-term.
  - We recall the visual, which cues the text.
  - Easier to think about material from visuals; require less working memory, fewer cognitive transformations
  - Provide examples, practice for students.

Common Visuals/"Maps"



Flowchart – sequence of events or operations; causal or procedural process

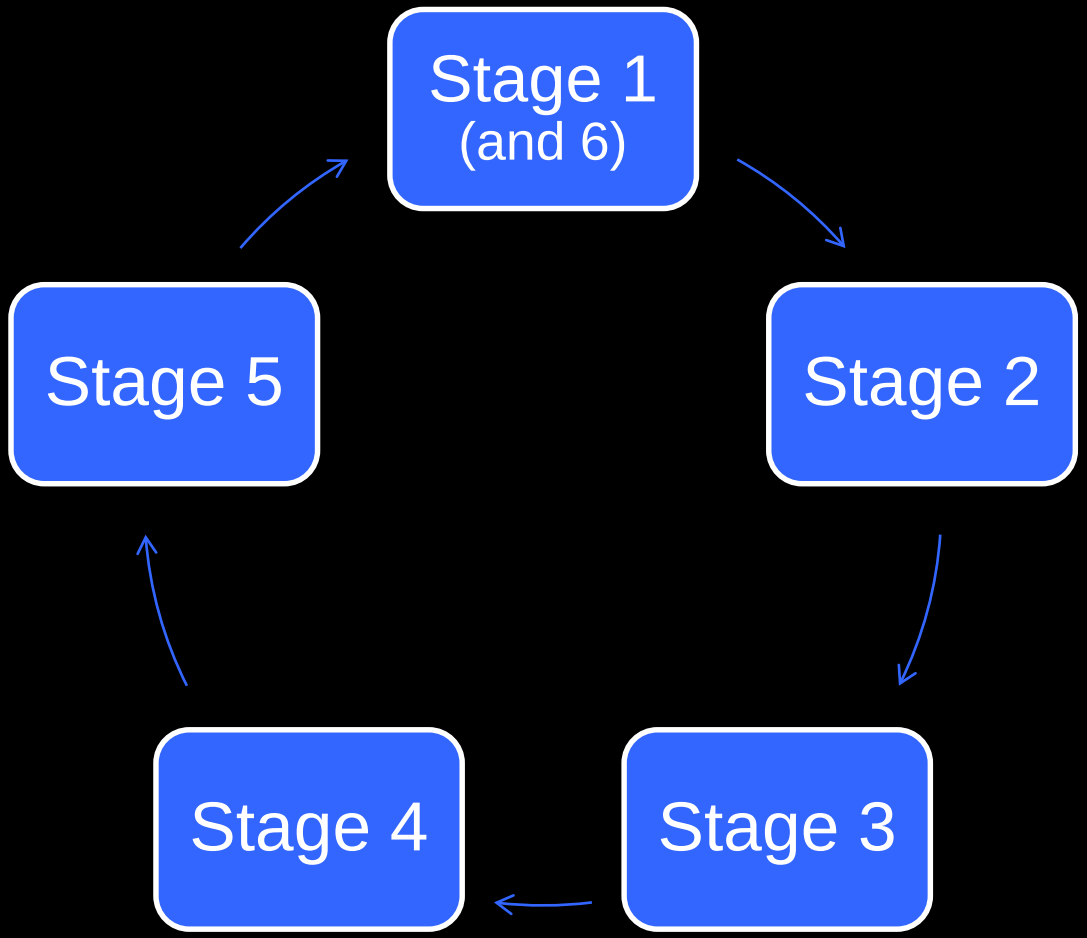




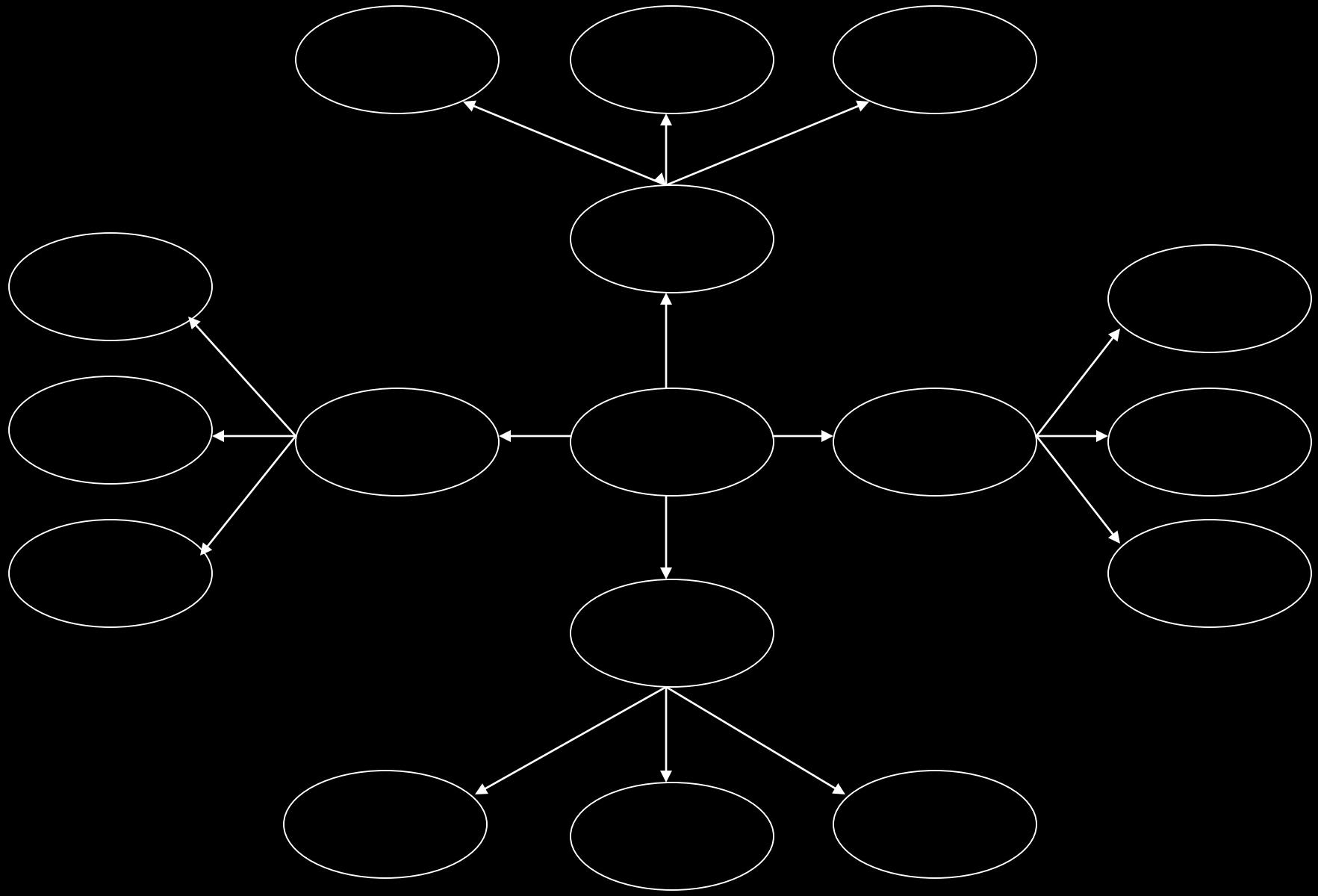
Concept Circle or Venn Diagrams –
relationships among concepts, categories, equations, topics, principles

	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					

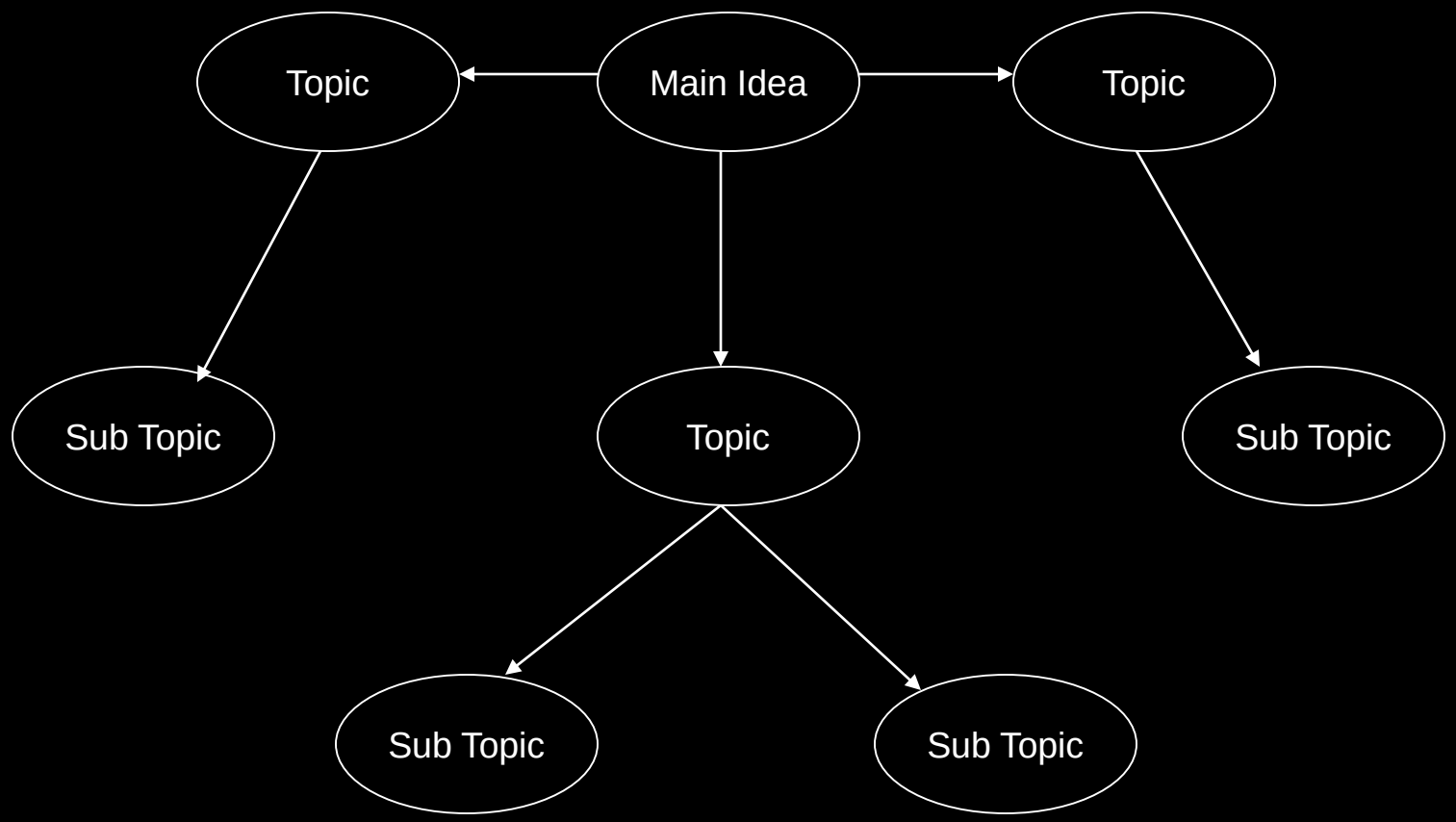
Matrix – classify or compare-and-contrast types of X



Cycle



Mind Map – free association or hierarchy



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.

Teach Students How to Concept Map

1. ID and list 12-15 concepts from reading, classes, etc.
2. Write each concept on a post-it note or small index card.
3. Identify main topic/concept (***superordinate***) and place at top center.

4. Rank-order or cluster remaining concepts (***subordinate***) from the most inclusive/general/broad/abstract (higher up) to the most exclusive/specific/narrow/concrete (lower down)

5. Arrange concepts in a linkable hierarchy.

6. Draw whole hierarchy on piece of paper with enclosures around concepts and ***labeled linking lines*** to specify relationship (a “proposition”; arrows not needed).

7. Look for and draw in cross-links (across branches), looping around other links, and label cross-links.

What will you do to enhance students' self-regulated learning skills in lectures and readings?

Activities on Assignments

- Math-Based Problems
  - “Think aloud” to prepare students for HW: Partners “talk through” & guide solutions.
  - Identify confidence level before and after solving.
  - Learn from problem w/ incorrect answer: Write error analysis and solve the same or similar problem.

- “Fuzzy” Problems – as in cases, PBL
  - Students describe the steps of process of arriving at their solution & deeming it best. Makes them aware of their reasoning in defining the problem, deciding principles & concepts to apply, developing alternative approaches & solutions, and assessing their feasibility, trade-offs, and relative worth. Students learn expert’s approach to complex problems.

- Papers and Projects – as applicable:
  - Research or writing process: steps taken, strategies, problems, how overcome
  - Skills acquired or improved; when useful in future
  - Assessment of own performance/work, progress, growth, risks, strengths, weaknesses, achievements

- Papers and Projects – as applicable:
  - Paraphrase of instructor's feedback
  - Revision goals and strategies before revision
  - Why assignment is valuable; what you learned doing it and what you will do differently next time
  - Advice on assignment for next year's students (preparation, strategies, pitfalls, value)

- Experiential Learning: service-learning, internship, field work, simulation, role playing
  - Connect to learning outcomes and course content (concepts and principles illustrated).
  - Explain how you set and modified goals and strategies, decided actions, and responded to other players.
  - Evaluate goal achievement, strategies, and performance.

Activities on Quizzes & Exams

- Exam Preparation
  - Pre-exam knowledge survey
  - Students write exam questions; teach Bloom.
  - Students create review sheet with active verbs.

- Post-Exam
  - Reflection on graded exam (Barkley, 2009)

1. Compare 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 – patterns?
6. Set a goal for next exam. What you will do differently?

- Students re-solve incorrect problems and write out the correct strategy.
- “Test Autopsy” – error analysis form
  - Can combine with reflection questions

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

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

End-of-Course Assignments

- Letter to next cohort of students
  - How to succeed
  - Content & skill learning highlights
- Self-evaluation: “How I got an A in this course – or not”
- Repeat self-assessment on meta-cognitive skills 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.)
- Repeat knowledge survey and compare.

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

Can We Teach Students Self-Control – to Defer Gratification and Avoid Procrastination?

Probably. At least some students.

- Easier to change young children
- Genetics impact one's sense of self-control and purpose and one's ability to keep learning and developing (twins study, Archintaki, Lewis, & Bates, 2012).
- But others find young adults *can* learn these behaviors (Davidson, 2003; Davidson & Begley, 2012; Schraw, 1998; Schraw & Dennison, 1994; Schunk & Zimmerman, 1998).

Set Stage for Achievement

- Social immediacies and warm rapport
- Foster students' positive feelings about subject matter, their self-efficacy/control over life, and their work.
- Well structured/organized course
- Clear, enforced policies, sanctions, and deadlines

(Catalano, Haggerty, Gainey, & Hoppe, 1979; Garrett, 2012; O'Grady, 2012; Resnick, Harris, & Blum, 1993)

Interventions

(Burns, 1989; Garrett, 2012; Hazard, 2011; Hazard & Nadeau, 2012; Leff, n.d.; O'Grady, 2012; Pulley, pers. Corresp., April 2012)

- Have students write goals for doing well in your course and completing major assignments, along with a timeline. They then monitor and evaluate their progress toward their goals.
- Be sure assignment directions and grading rubrics are clear and detailed.

- Urge students to start each day by deciding 3 tasks to be done that day.
- Have them schedule ***all*** activities for the week, then keep track of the time each course-related task requires.
- Make them aware of their self-deceptions in procrastination; have them keep a “lie log” of excuses for putting off tasks.

- Break challenging, long-term assignments into steps with deadlines.
- Get students started on major assignments with concept-mapping, free writing, goal-setting, schedule-planning.
- Grade work to be revised pass/fail on meeting specifications.
- Don’t leave much time between due dates of first draft and revision.

- Have students reflect on their struggle (from Burns, 1989, *Five-Step Plan for Die Hard Procrastinators*):
  - Keep list of unexpected difficulties.
  - Keep list of personal costs/benefits of not procrastinating and deferring grat'n.
  - Record negative thoughts about your efforts and strategies for tuning them out.
  - Reward yourself.

- Set up assignment and grading system that rewards students for early submissions and penalizes lateness.
  - Let submission dates determine the amount of work required – e.g., students have to do only 6 problems if they submit solutions by earliest date, 8 problems if they submit solutions slightly later, 10 problems if they submit solutions much later (Leff, n.d.).

- Set up a “token economy” that incentivizes deferring gratification.
- Have students observe themselves while studying, solving problems, reading, writing, etc., and identify factors that increase persistence (e.g., physical exercise before working, background music, regular breaks, particular physical positions, particular places).

What will you do to help students learn to defer gratification and avoid procrastination?