Evidence-based strategies to improve time management and self-directed learning in higher education

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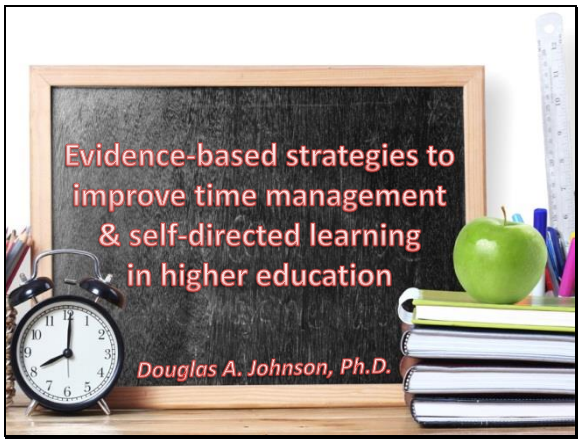

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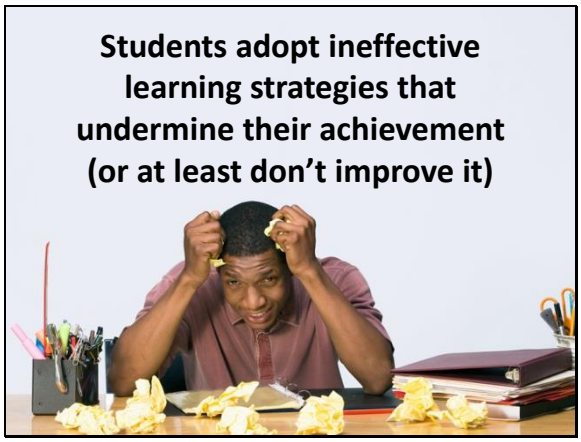

- Simple techniques are available that teachers and students could use to improve student learning and achievement
- Many teachers are not being told about these techniques
- Many students are not using them
- Students instead adopt ineffective learning techniques that undermines achievement, or at least does not improve it

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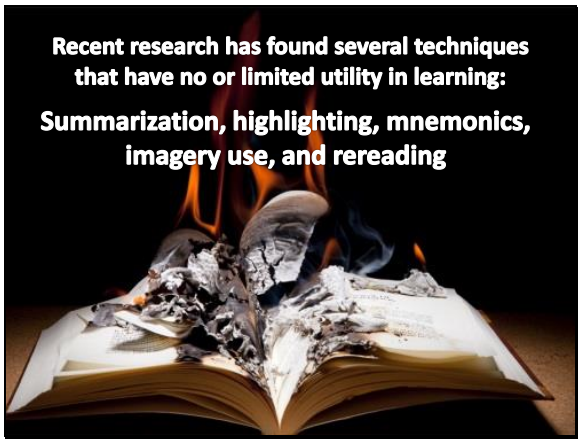

- Techniques with no or limited utility: summarization, highlighting, mnemonics, imagery use, and rereading

From Dunlosky et al., 2013

Slide 4

- Recent surveys indicate that students endorse the use of rereading and highlighting

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- Note that the frequently used and endorsed techniques are also the ones that doesn't work

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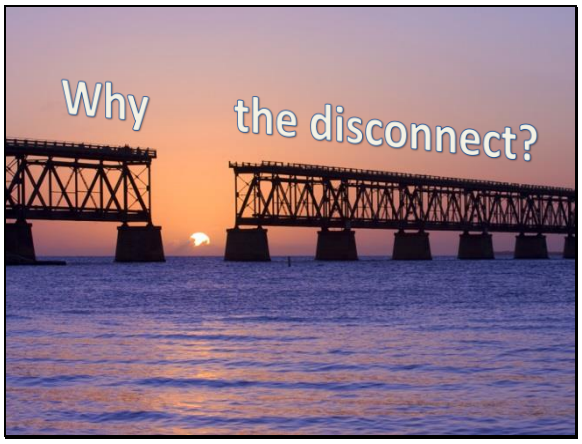

- Why don't they learn from experience?

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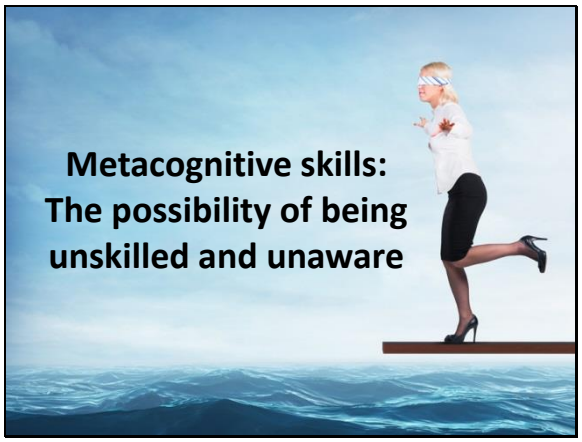

- Metacognition: Knowledge and beliefs about one's own cognitive processes
- In regards to academics, the awareness of strengths and weaknesses in regards to course material
- Common problem of students believing they have achieved, when in fact they have not

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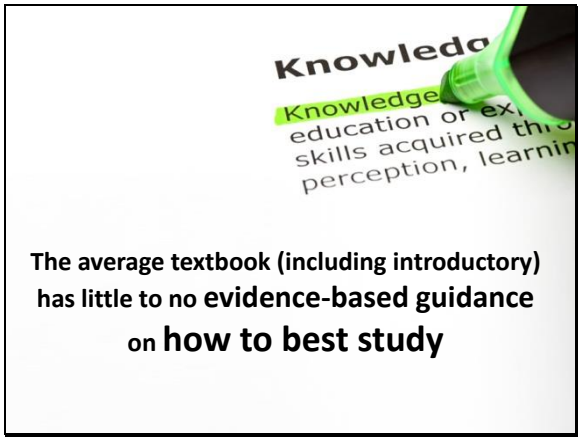

- Despite a specialized focus on how people learn, introductory and educational psychology textbooks contain little to no coverage on effective self-study techniques or practical tools that instructors can implement
- Instead tend to focus of broad theories that are difficult to translate into working applications
- Other disciplines do not tend to fare any better

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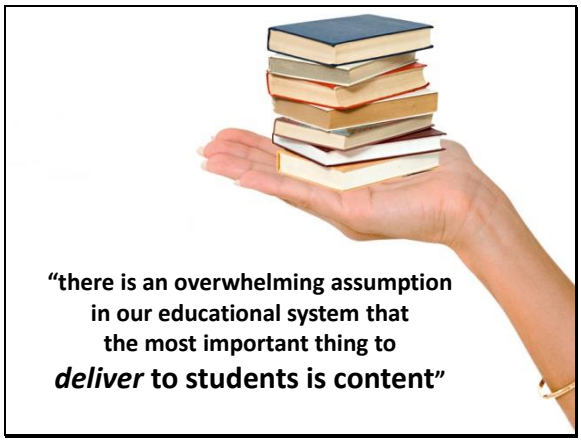

"there is an overwhelming assumption in our educational system that the most important thing to *deliver* to students is content" (McNamara, 2010)

- Students who succeed in supervised learning environments do not necessarily transfer these skills to unsupervised learning environments, such as the at-home self-study required by higher education
- Potentially huge benefit if introductory courses taught about self-study skills across a variety of disciplines

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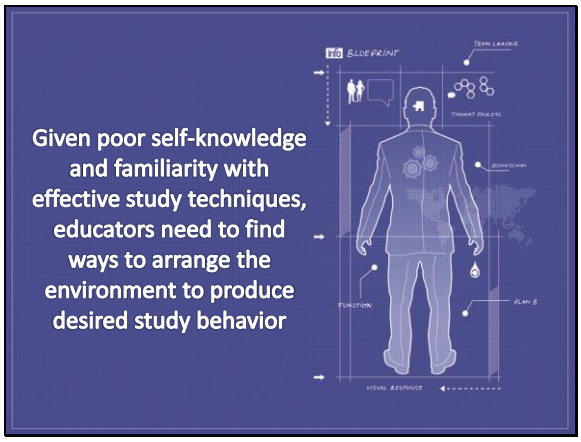

- Opportunity to support well-intentioned but struggling students
- Where should we put our emphasis?

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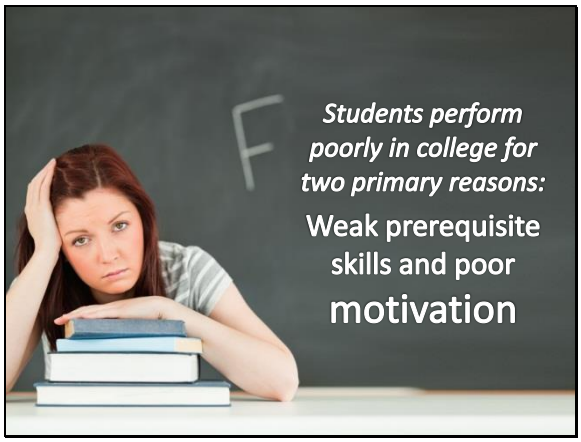

- Weak prerequisite skills and poor motivation as obstacles. The present analysis deals only with motivation.
- Typical to locate the problem as internal to the student
- An alternative approach

From Michael, 1991

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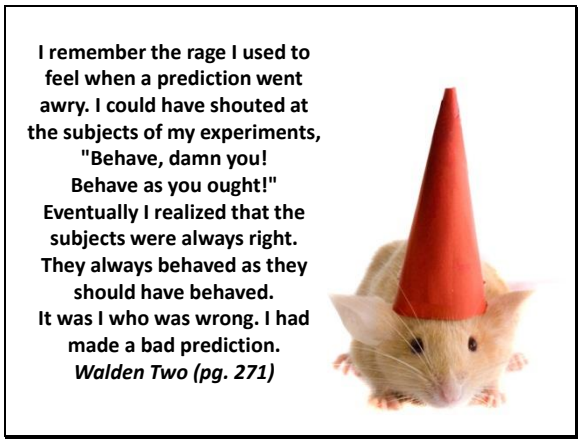

I remember the rage I used to feel when a prediction went awry. I could have shouted at the subjects of my experiments, "Behave, damn you! Behave as you ought!" Eventually I realized that the subjects were always right. They always behaved as they should have behaved. It was I who was wrong. I had made a bad prediction. Walden Two (pg. 271)

- Failed to make any gains until he stopped blaming rats for the failures of the experiments and began looking at the environment

From Skinner, 1948

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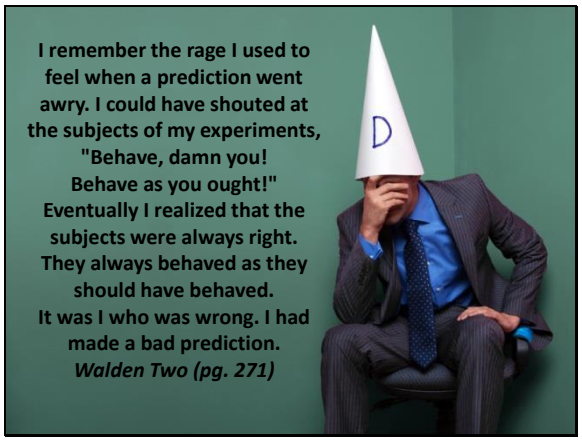

- Tendency to simply blame students (motivation, demographic changes, kids these days, etc)

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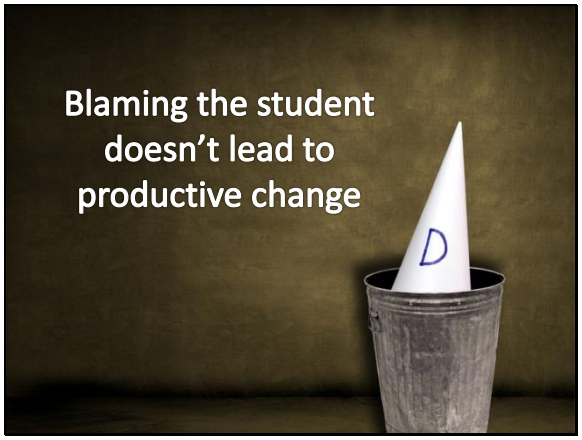

- While blaming students may be comforting on occasion, it ultimately does little to enhance our teaching strategies or educational outcomes
- If we want to make gains, need to focus on the academic environment

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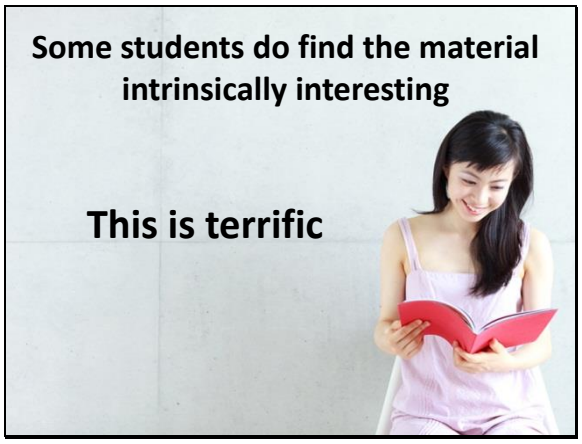

- The question of motivation
- Some students does seem intrinsically motivated

Slide 16

- But intrinsic motivation is usually satisfied much faster than the instructor would like
- Must compete with many other forms of intrinsic motivation
- Other sources of intrinsic motivation may be difficult to delay, unlike studying

Slide 17

- Also, instructors can do very little to modify intrinsic motivation

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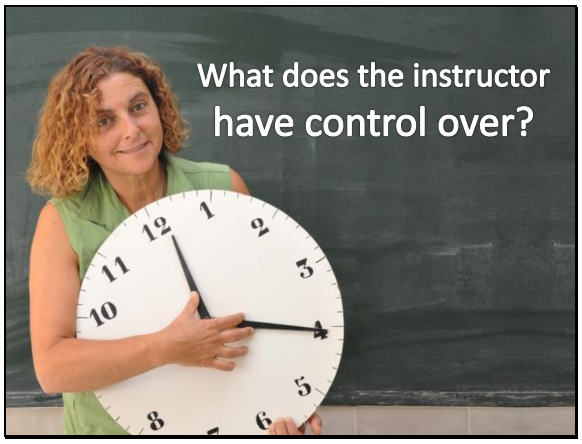

- Instructors can control grades and their relation to deadlines

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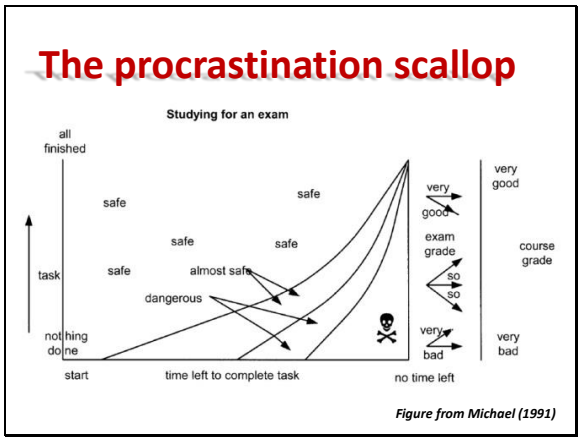
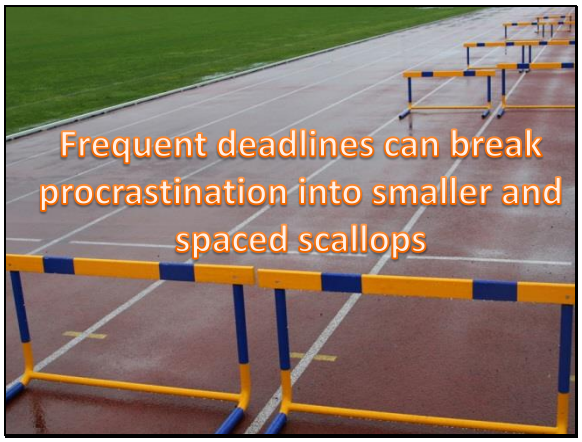


- The procrastination scallop illustrates the problem
- Pattern that is common for most students (and non-students)

Figure from Michael, 1991

Slide 20



- Solution to make the scallop more manageable

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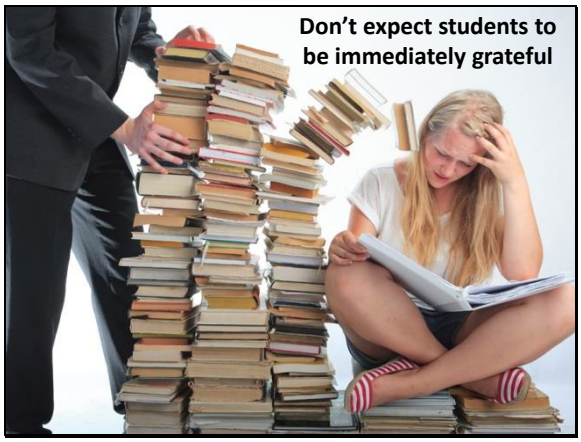

- Myth that they would perform better if given more time

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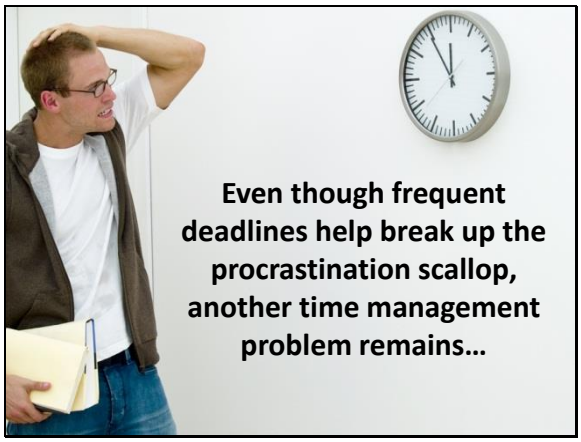

- Even if procrastination was fixed, another common time management problem remains

Slide 23

- Planning fallacy: The tendency to underestimate the amount of time required to complete a project or assignment

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- People tend to be too optimistic about future plans, downplaying obstacles or other factors that led to time management failure in the past
- Difficult to accurately estimate the whole of a project

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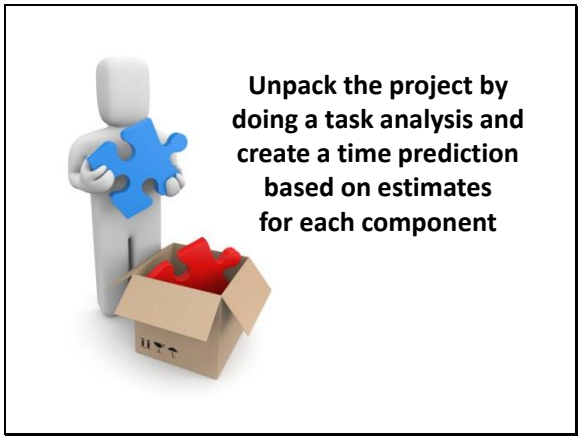

- Unpacking a task: Base time estimates on estimates for each component of the task (and then add them up) rather than simply estimating the entire project

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- Example: Even experts, such as accomplished chefs, poorly plan out their necessary time

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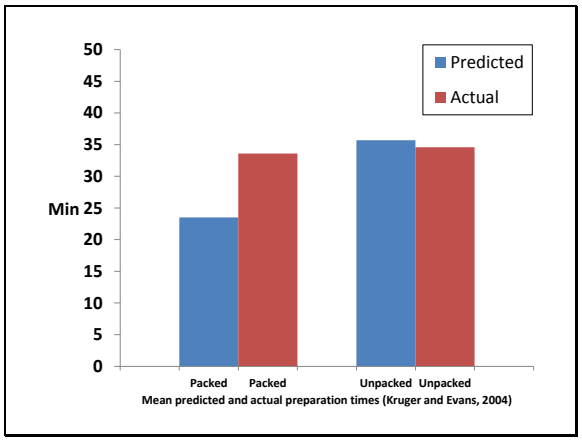

- Effects of unpacking for time estimation

Figure from Kruger and Evans, 2004

Slide 28

- Public promise about deadlines
- Enforced by significant other, roommate, friend, or family member
- Publicly stated promises tend to be more difficult to break than the private promises

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- Set personal deadlines that occur more frequently than instructor-imposed deadlines

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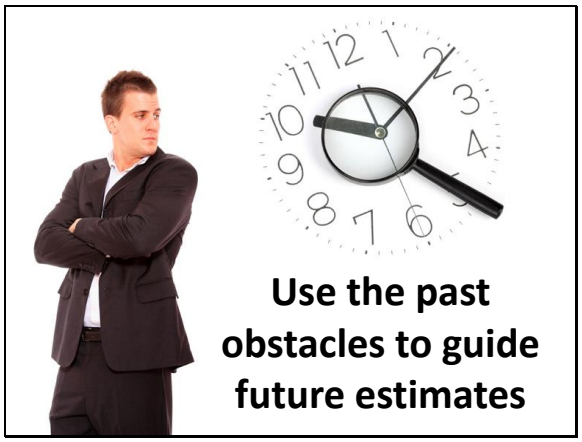

- Don't assume the future will be problem-free or a best case scenario
- Incorporate past obstacles into future estimates

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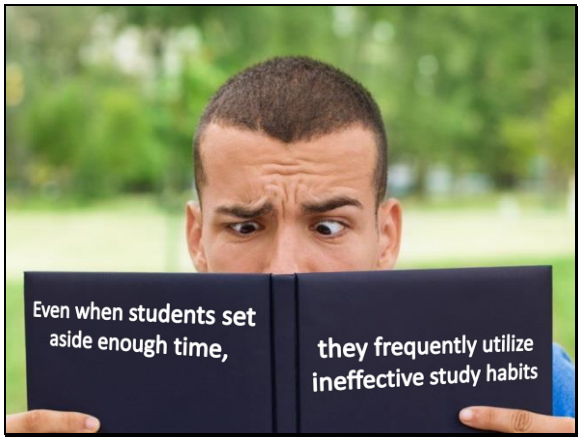

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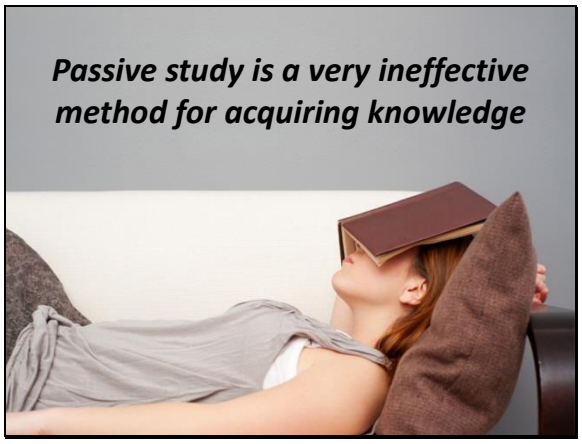

- Illustration of sleep learning as a passive learning strategy

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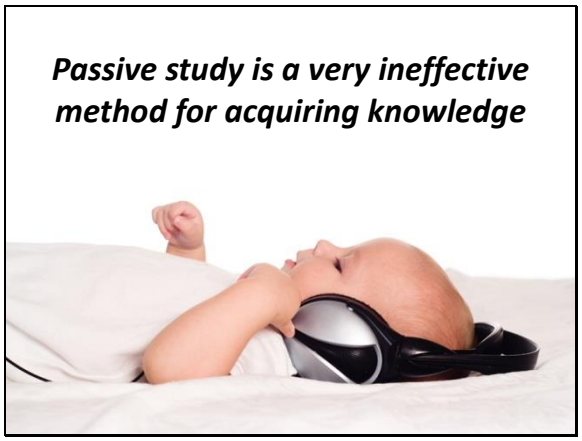

- Illustration of Mozart Effect as a passive learning strategy

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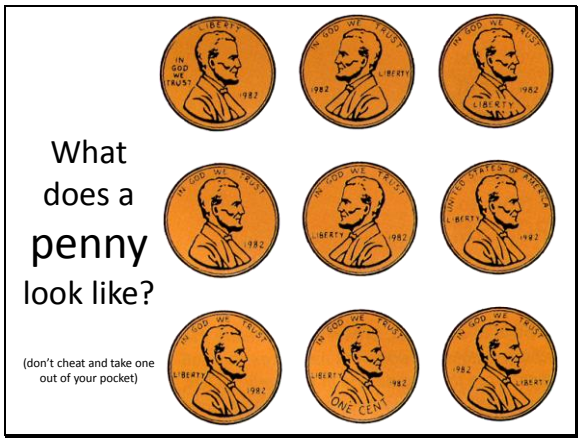

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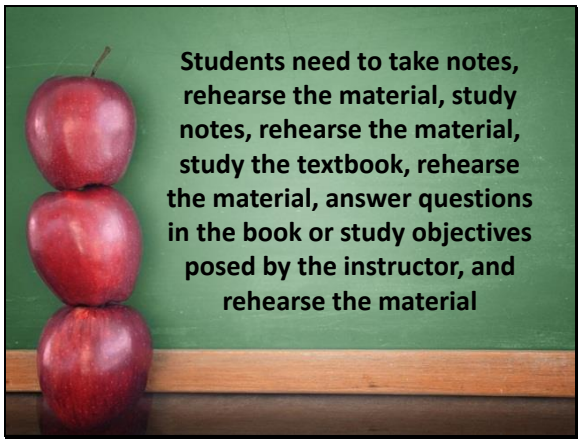
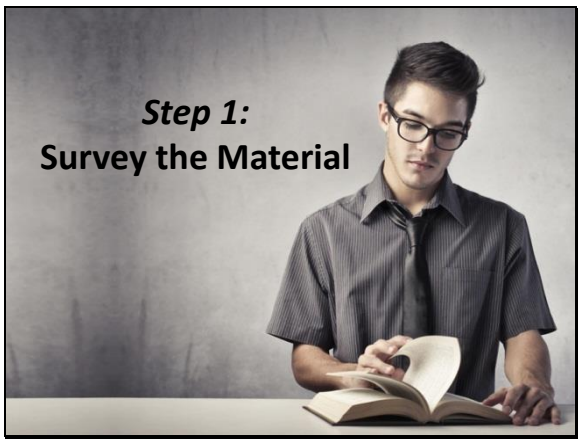


Slide 36

- SQ3R approach

Slide 37



- Step 1: Survey the Material
- Skim titles and headings of each chapter
- Pick out important looking elements without reading carefully yet

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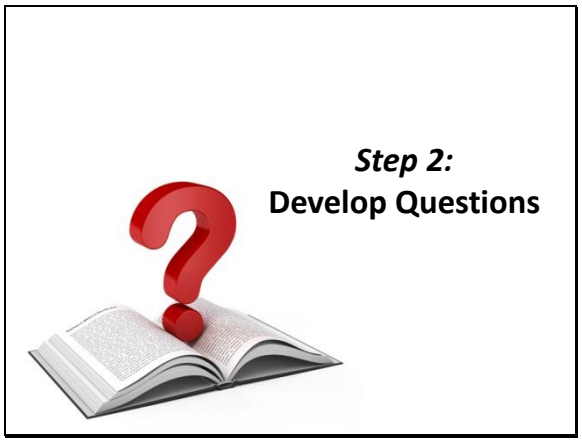

- Step 2: Develop Questions
- Predictions regarding important material
- Review of any learning objectives supplied by instructor

Slide 39

- Step 3: Read Actively
- Read through material, hunting for material to confirm predictions or answer objectives
- Read all the material so context can help facilitate acquisition

Slide 40

- Step 4: Recite the Answers to Questions
- Create flashcards

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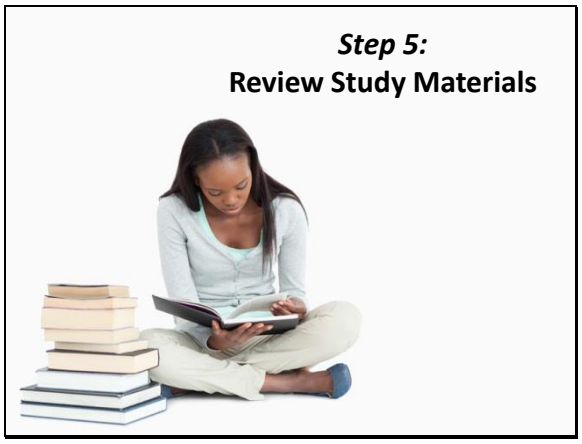

- Step 5: Review Study Materials
- Rehearse material repeatedly until responses are both fast and accurate
- Reread materials to help connect memorized concepts (will be much easier post-memorization)

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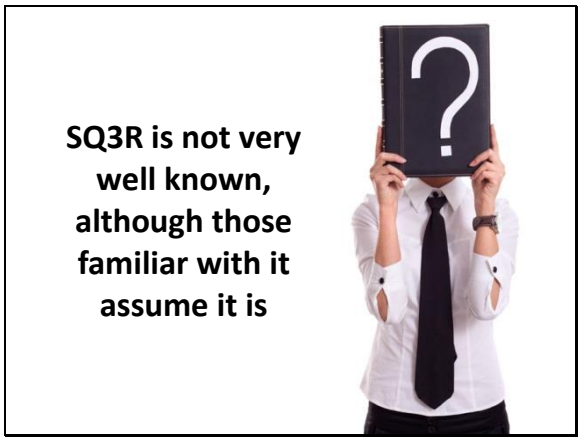

Slide 43

- SAFMEDS
- An evidence-based alternative to traditional flashcards

Slide 44

- S – say – the learner should say the response out loud. Not "think" the responses silently.
- Related to phenomenon labeled as the production effect

Slide 45

- A – all – one works with the entire deck of cards as a unit
- Can individually practice troublesome cards, but don't neglect the entire deck

Slide 46

- F – fast – in the timed sessions, work through the cards as quickly as possible
- Not slowly like flashcards
- This is a standard that goes beyond accuracy

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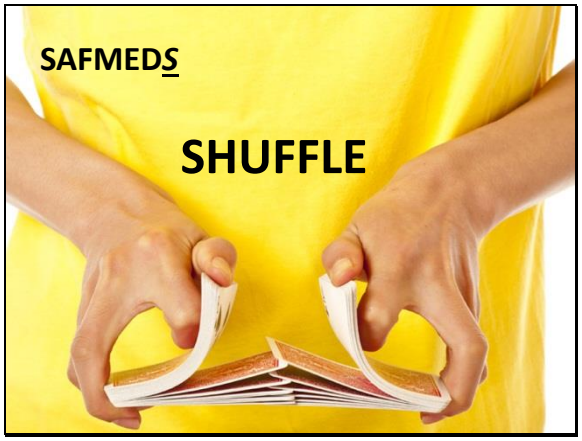
Slide 47

- M – minute – the brief, timed sessions

Slide 48

- E – every –
- D – day – do the brief, timed sessions every day, at least once a day
- Count up correct cards and errors on a daily basis to assess progress (or lack of)

Slide 49



- S – shuffle – the cards before doing a timing
- Avoid becoming sequence dependent

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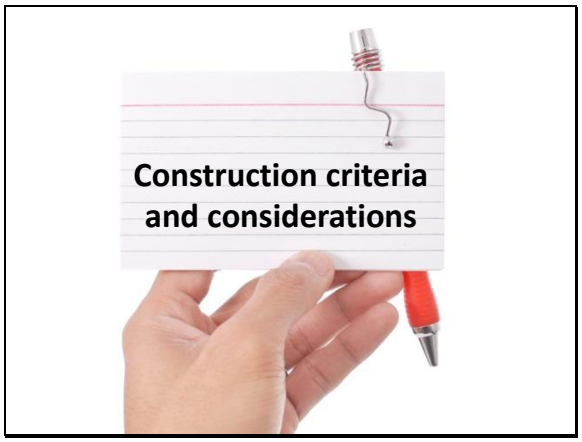

- keep the text on the back side relatively brief
- Typically, there will be multiple cards to cover each concepts
- Avoid any irrelevant hints or cues (smudges, tears, strange words, highlighting, circled numbers, differing colors, etc)

Slide 51

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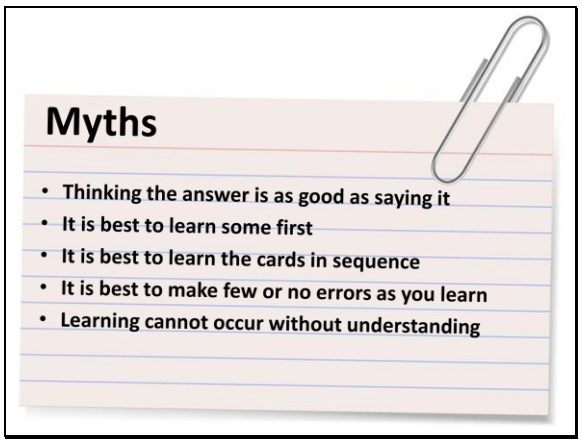

- Myths revealed through research on SAFMEDS

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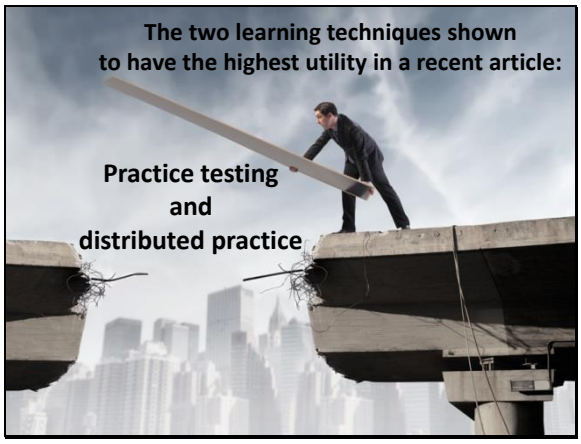

- Frequent deadlines, SQ3R, and SAFMEDS have elements of the most successful and evidence-based strategies

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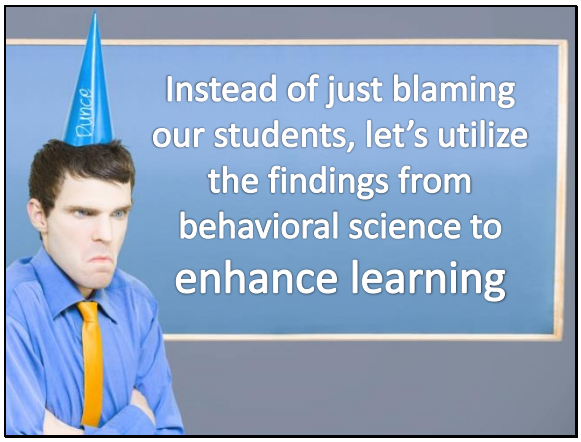

- All of these are strategies that can be taught

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