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**Learning at Iowa:**  
***Successes and Challenges in Developing a  
Campus-Wide Learning Framework for Student  
Success***

**Gardner Symposium: Transforming the Foundational Postsecondary  
Experience**

June 12, 2023

# Introductions

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# Equity and Learning

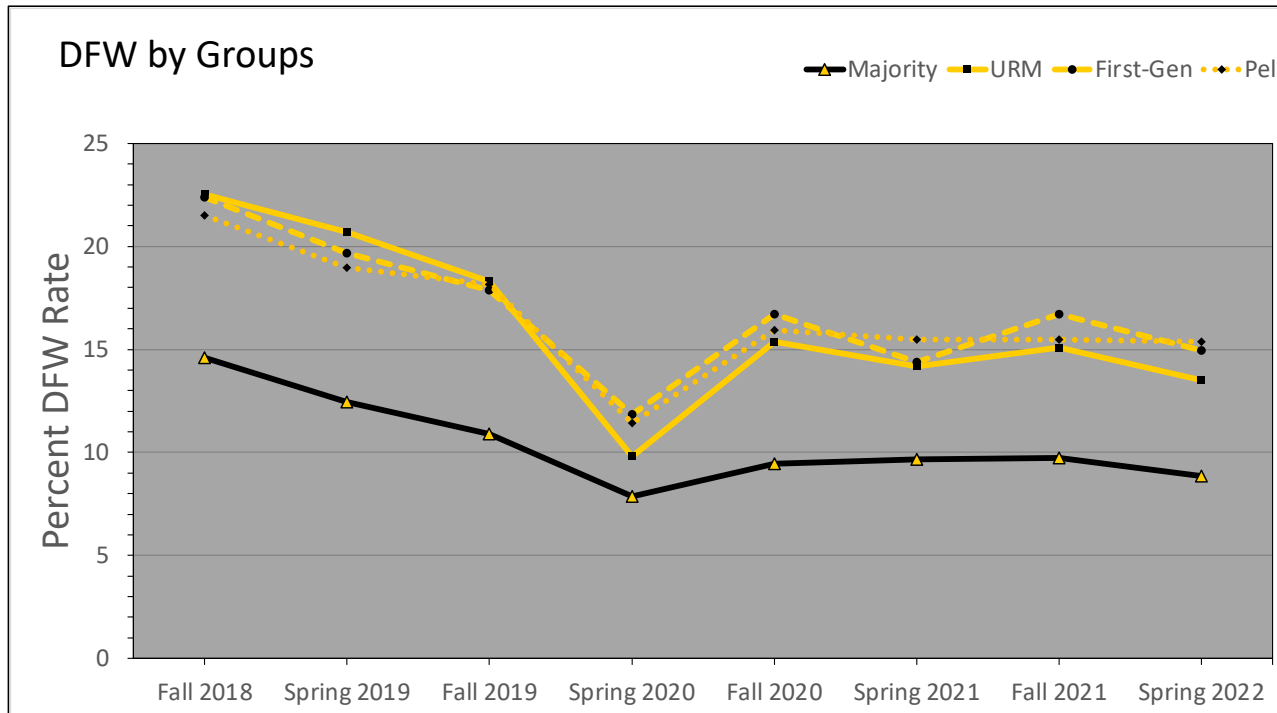
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## National Graduation Rates:

~49% Pell Grant Recipients

~65% Non-Pell Recipients

# Equity and Learning



# Equity and Learning

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*Supporting student learning supports equity.*

# Equity and Learning

## What do students know about learning?

*Would you say that you study the way you do because a teacher (or teachers) taught you to study that way?*

**20% YES**  
**80% NO**

n=145 Spring 2023

**32% YES**  
**68% NO**

Kornell & Bjork (2007)

# Equity and Learning

## Prospective College Students Increasingly Say They Feel Unprepared for Higher Education

By *Emma Hall* | JUNE 12, 2023



NIEN-KEN ALEC LU FOR THE CHRONICLE

A growing share of high-school students say they feel unprepared for college, academically and emotionally, and are choosing not to enroll right away —

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- Campus-wide initiative to promote student learning.
- Applying evidence-based practices from cognitive science.
- Active collaborations with ~30 departments and offices.
- **Goals:**
  - Develop common language, materials, and resources.
  - Support students, faculty, and staff.
  - Promote equitable education practices.



# Aligned Approaches Across Campus

## Instructors & Faculty

Center for Teaching  
Faculty Learning Community (FLC)  
Faculty Presentations/Workshops  
Teaching Assistant (TA) trainings

## Staff

Academic advisors in undergraduate colleges  
Academic coaches  
Pomerantz Career Center coaches

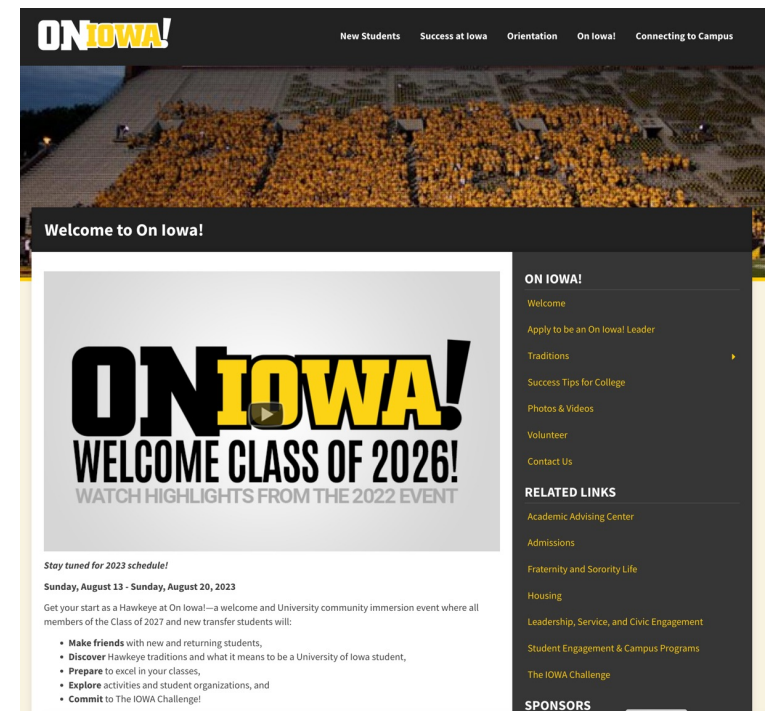
## Students

Success at Iowa  
Excel lecture, On Iowa!  
Peer Leaders – LAs, Peer Mentors, SI, tutors, etc.  
Center for Inclusive Academic Excellence  
Residence Education hall staff  
PSY:1010, Learning About Learning

# Campus-Wide Touch Points for Students

## On Iowa: Fall semester orientation

- “Excel” lecture delivered by instructors (often of large enrollment courses)
- Expectations of courses
- Introduction to Learning at Iowa



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# Campus-Wide Touch Points for Students

## Excelling at Iowa: On-Boarding Course for New Students

- University-wide information
- Learning at Iowa module
- 3<sup>rd</sup> week of Fall semester



# Campus-Wide Touch Points for Students

## Partnership with Residence Education

- Three Ms bulletin board
- Presentation to all Resident Assistants
- Talking points for “Hawk Talks”



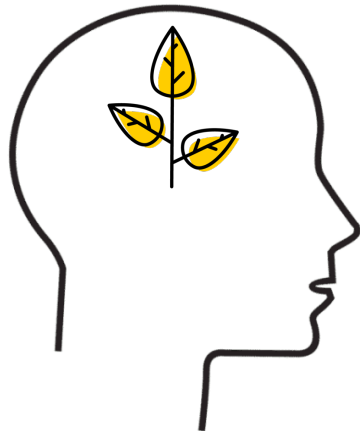
# Campus-Wide Touch Points for Students

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## Integration in Large Introductory Course (College Algebra)

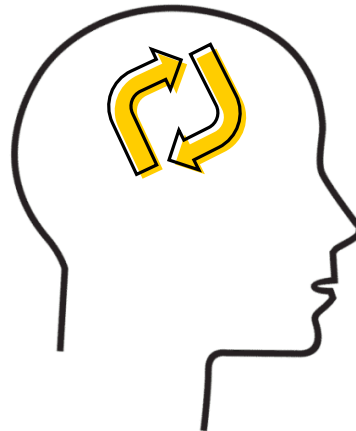
- Metacognitive journals throughout semester
- Goal setting, study plans, exam wrappers
- “Metacognitive Mentors” provide individual feedback

# Three Ms for Effective Learning



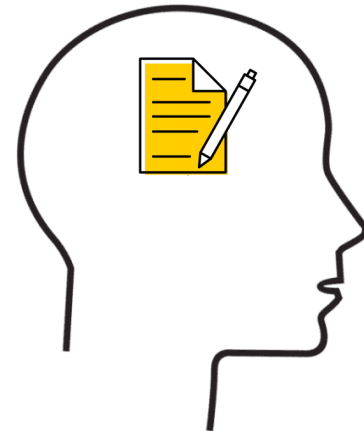
## Mindset

*Know that you can learn*



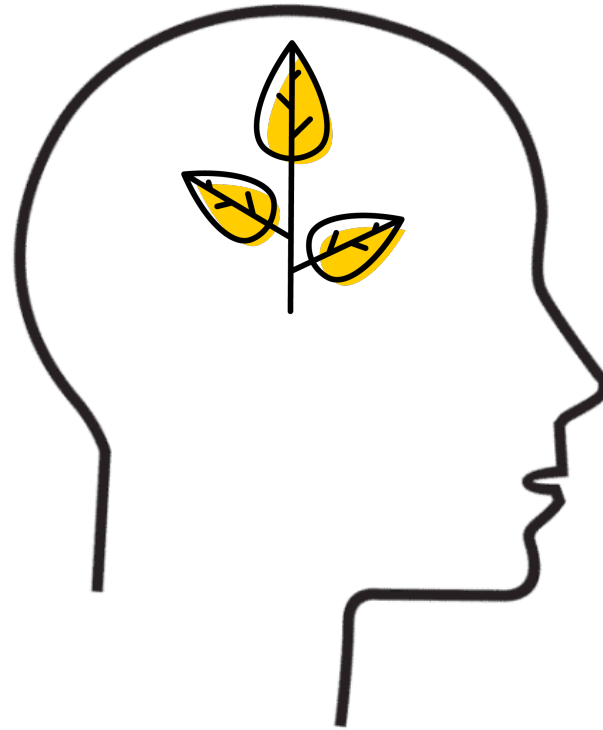
## Metacognition

*Track your learning and struggles*



## Memory

*Use effective learning methods*



# Mindset

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# Mindset

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No matter how much intelligence you have, you can always change it quite a bit.

1	2	3	4	5	6
Strongly disagree					Strongly agree



# Mindset



Unchangeable

*"I'm not a math person"*  
*"I'm just good at languages"*  
*"I don't even have to try"*

Can grow with effort  
& effective strategies

# Mindset: Student Audience

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- “Doing hard things” discussion (*College Algebra*)
  - Emphasizes effort and practice
  - Includes discussing strategies for when challenges arise

# Mindset: Faculty/Instructor Audience

- Typically targeted at learners
- Implications for instructors:
  - e.g. Racial achievement gap (Canning et al., 2019)

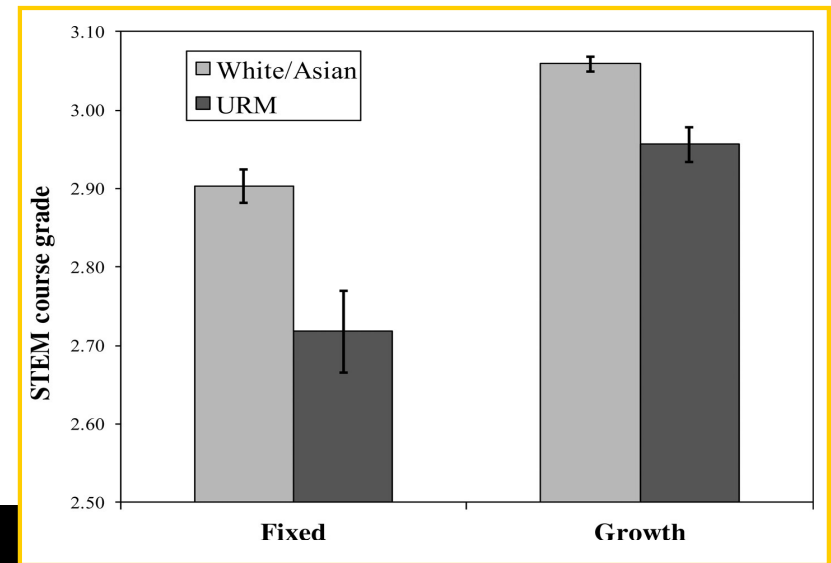
RESEARCH ARTICLE | SCIENTIFIC COMMUNITY

STEM faculty who believe ability is fixed have larger racial achievement gaps and inspire less student motivation in their classes

Elizabeth A. Canning\*, Katherine Muenks†, Dorainne J. Green and Mary C. Murphy\*

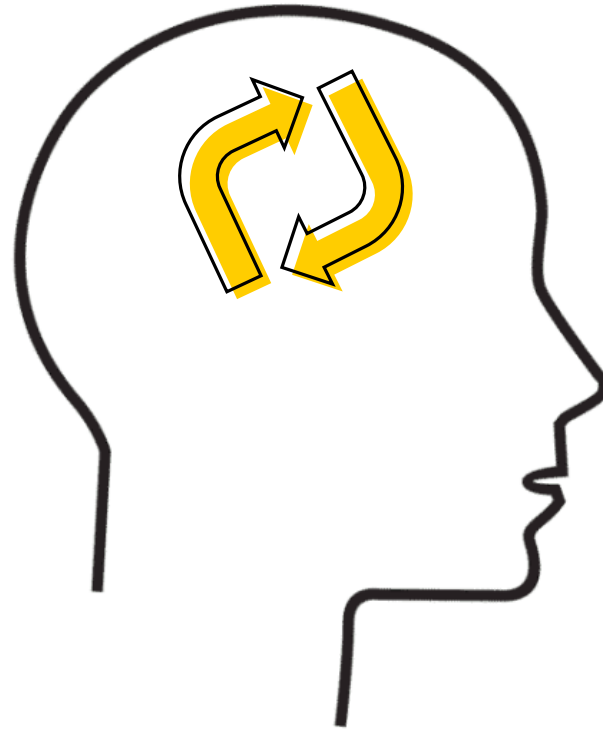
\* See all authors and affiliations

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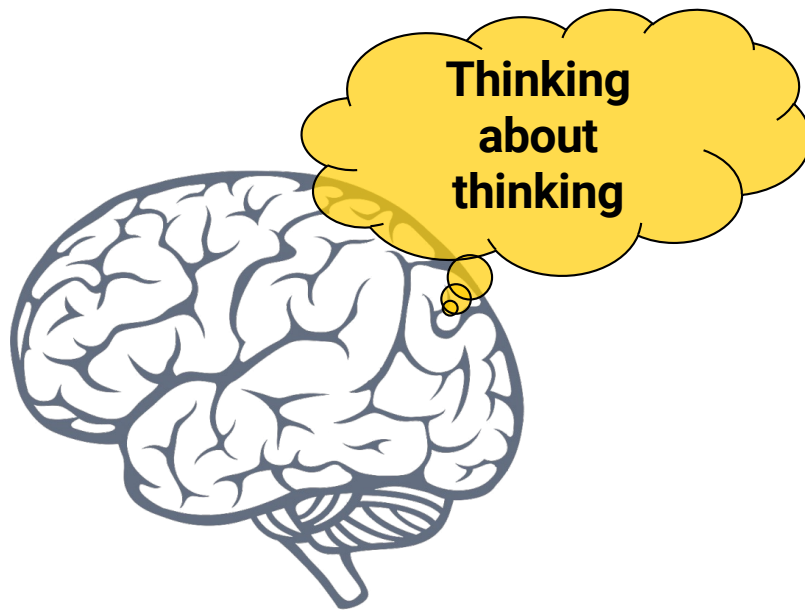
# Metacognition

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# Metacognition

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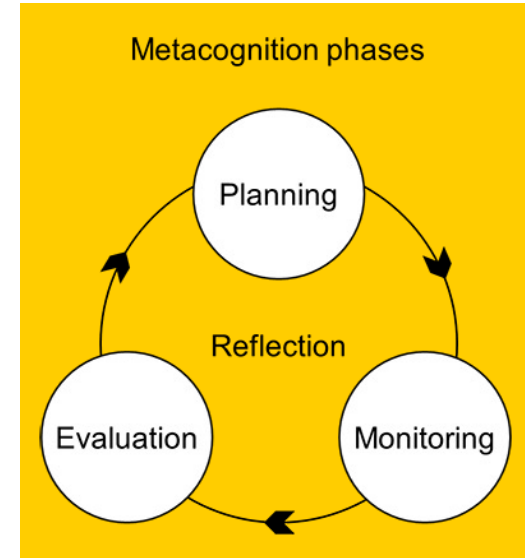
- Knowledge of cognition
- Regulation of cognition

Effective learning requires **reflecting** on, **directing**, and **controlling** thinking.

# Elements of Metacognition

## Metacognitive Regulation (Schraw & Dennison, 1994)

- 1. Planning**  
(identify best strategies and approach)
- 2. Monitoring**  
(in-the-moment awareness of how you're doing)
- 3. Evaluating**  
(appraisal: how did the learning go?)



# Metacognition: Student & Staff Audiences

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Cognitive wrappers: Structured opportunity to reflect on performance.

Around an exam—“exam wrappers” (Lovett, 2013)

- Evaluate exam preparation
- Identify errors and areas of strength and weakness to guide further study
- Helps make explicit the connections between **effort, strategies, and outcomes.**

# Metacognition: Student & Staff Audiences

## Q1. How would you describe your preparation? Select all that apply.

- I did most of my studying in the day or two before the deadline.
- I did most of my studying several days (at least 3-4 days) before the deadline.
- Most of my study sessions were 30-60 minutes long.
- Most of my study sessions were an hour or longer.
- Most of my study sessions were on my own.
- Most of my study sessions were in a group with other students.

## Q2. Which of the following strategies did you use to prepare? Select all that apply.

- Attended Supplemental Instruction (SI)/Tutoring/Departmental Help
- Created concept maps, flow-charts or other visual representation
- Created my own study guide and practice questions
- Explained concepts to someone else

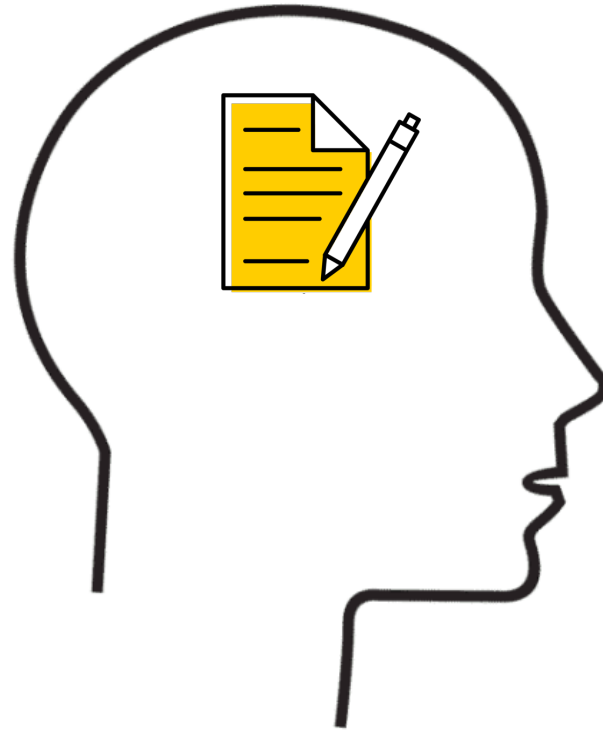


# Metacognition: Student & Staff Audiences

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Cognitive wrappers: Structured opportunity to reflect on performance.

Longer time-scales—“semester wrappers”



# Memory

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# Memory

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**How do students study/prepare for an exam?**

*Discuss with your neighbor the approach you've heard most recently from a student...*

*How would you rate the effectiveness of this approach?*

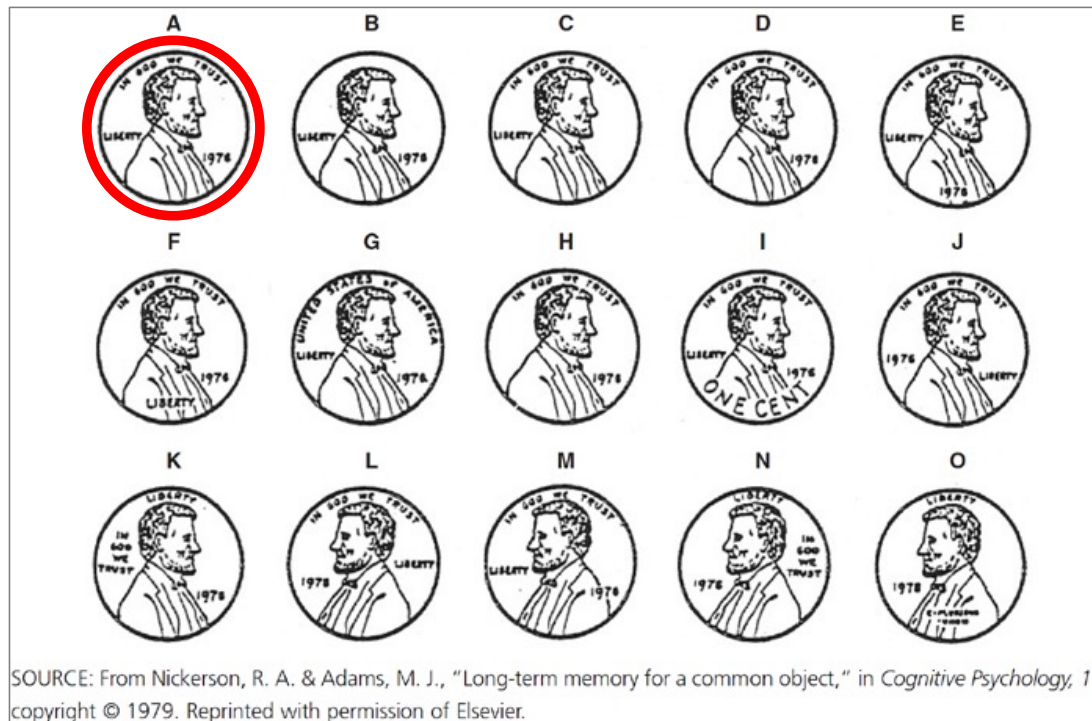
# Memory

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Memory is central to learning, but...  
memory is not *memorization*.

“Memory is the residue of thought” (Willingham, 2021)

# Memory



# Memory

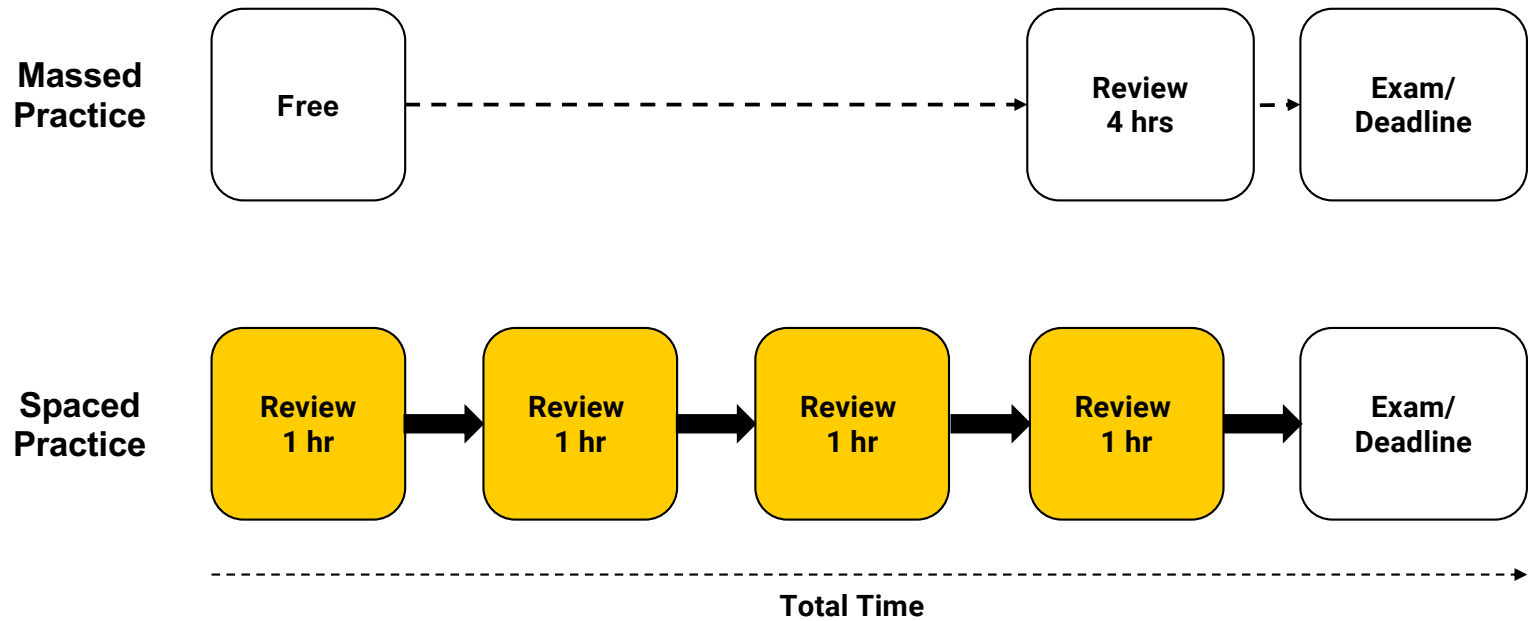
Effective learning practices feel hard.

Cognitive scientists call these practices:

## ***Desirable Difficulties***

1. Spaced and interleaved practice
2. Retrieval practice

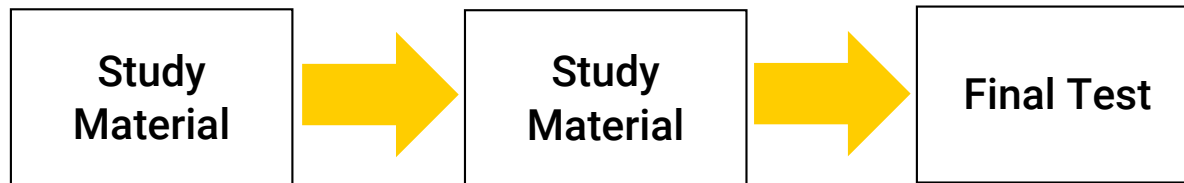
# Spaced Practice



# Retrieval Practice

Roediger & Karpicke (2006)

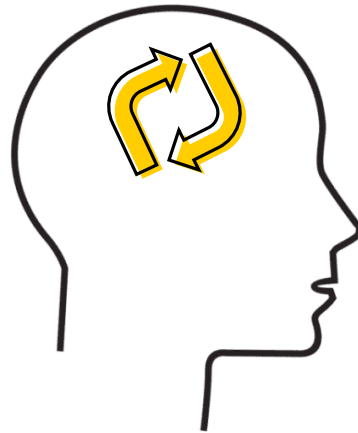
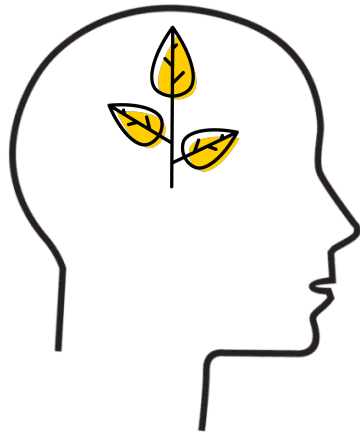
Group 1



Group 2







# Achievements & Challenges

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## Implementation

- Consistent messaging from various sources
- But, even some of these supports are beneficial
- Need continuous training to keep messaging consistent

## Learning environment matters

- Use in more courses

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**Questions?  
Comments...  
Discussion...**

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# Additional Resources

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