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

National Graduation Rates:
~49% Pell Grant Recipients
~65% Non-Pell Recipients
Equity and Learning

DFW by Groups

Majority
URM
First-Gen
Pell

Percent DFW Rate

Fall 2018 Spring 2019 Fall 2019 Spring 2020 Fall 2020 Spring 2021 Fall 2021 Spring 2022

Learning at Iowa
Equity and Learning

Supporting student learning supports equity.
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

Kornell & Bjork (2007)
Equity and Learning

Prospective College Students Increasingly Say They Feel Unprepared for Higher Education

By Emma Hall  |  JUNE 12, 2023

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

• 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
Campus-Wide Touch Points for Students

Excelling at Iowa: On-Boarding Course for New Students

- University-wide information
- Learning at Iowa module
- 3rd 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

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

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

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Learning at Iowa
Mindset

Fixed

Unchangeable

“I’m not a math person”

“I’m just good at languages”

“I don’t even have to try”

Growth

Can grow with effort & effective strategies

Intelligence & skills...
Mindset: Student Audience

• “Doing hard things” discussion (*College Algebra*)
  o Emphasizes effort and practice
  o 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. Canning1, Katherine Muenks1, Dorianne J. Green and Mary C. Murphy1

See all authors and affiliations

Science Advances, 15 Feb 2019; Vol. 5, no. 2, eaau4734
DOI: 10.1126/sciadv.aau4734
Metacognition

IOWA Learning at Iowa
Effective learning requires reflecting on, directing, and controlling thinking.

- Knowledge of cognition
- Regulation of cognition
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

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.
### 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.
- [ ] 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

Cognitive wrappers: Structured opportunity to reflect on performance.

Longer time-scales—“semester wrappers”
Memory
Memory

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

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

Massed Practice

Free

Review 1 hr

Review 1 hr

Review 1 hr

Exam/Deadline

Spaced Practice

Review 1 hr

Review 1 hr

Review 1 hr

Exam/Deadline

Total Time
Retrieval Practice

Roediger & Karpicke (2006)

Group 1

Study Material

Study Material

Final Test

Group 2

Study Material

Recall Material

Final Test
Achievements & Challenges

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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