

Intentional *Teaching*:
Undergraduate *research* in
Psychology

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COPLAC panel at AAC&U

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Why is research considered *teaching*?

- Mark Hopkins, the student, and the log
- The log (for psychology) = empiricism
- False dichotomy between teaching and research,
 - But still in effect at many institutions
- COPLAC Summer Institute (UNC-Asheville, June 2007)
 - Best practices: *“Mentoring student researchers in psychology IS teaching”*

Undergraduate Research Program at MCLA

- Student research and travel grants
 - Expedited review and Vice-President's monies award \$300 per student/semester
- Annual Research Conference
 - Established 2002
 - Involves students in all disciplines on campus
 - Many Psychology majors involved

Integrating research in Psychology courses

- Two required Research Methods courses
- Upper-level courses with research components, e.g., Cognitive Psychology
- Research courses
 - Research Assistant, Independent Study, Senior Thesis
 - Research Seminars
 - Behavior Analysis, Social Development, Social Cognition, Psycholinguistics, Neuroscience

Unscripted Challenges

1. How do you recruit students for research courses? What are the pros and cons of making research courses required or optional?

Unscripted Challenges

2. What is the ideal enrollment for research courses? What has your experience been with small (1 or 2 students) vs. large (up to 10 students) research courses?

Unscripted Challenges

3. How do you fairly distribute group responsibilities and address concerns about group composition and cooperation?

Unscripted Challenges

4. How do you handle assigning grades in research courses? Should they be Pass/Fail or is it feasible to assign traditional letter grades?

Relatedly, how do you handle order of authorship on student presentations?

Unscripted Challenges

5. How much can you realistically expect to accomplish in a single semester? How should you handle these limitations?

The Sleep Psychophysiology Lab (Brooks)

- Equipment: BIOPAC system capable of recording and analyzing a variety of psychophysiological signals, e.g., EEG, EOG, EMG, HR, RT, GSR
- Superlab PRO used to present word stimuli



Examples of research in general education course -

Neuroscience: Sleep and Dreams

- Memory performance with and without sleep
- Timing of food intake and sleep quality
- Circadian rhythm and academic performance

- ***Intention: To understand the scientific method***
- ***Unscripted Challenge: small sample sizes almost always yield nonsig. results***

Brooks: Course 1

- A general education course in Sci/Tech domain:
“Neuroscience: Sleep and Dreams”
 - Use BIOPAC Student Lab exercises
 - Students work either individually or in small groups (2-3) to choose a hypothesis that can easily be tested with equipment
 - Classmates serve as participants > small n .
 - Research paper and presentation at our conference (APA style not mandatory since course open to all students on campus; mostly non-psychology majors)

Upper Level Research Seminar

- Upper level Research Seminar in Psychology: “*Sleep Research*”
 - Enrollment limited to 12; <8 preferred
 - Stats/methods sequence is required
 - Preference for “motivated” students
 - Students review literature, develop hypotheses as a group, design study, collect data (subject pool and beyond); analyze data write APA-style paper; may involve subgroups for multiple hypotheses
 - Presentation at local, regional, national conferences; occasionally a publication

Examples of research in upper level *Sleep* research seminar

- “Can a daytime nap enhance memory and problem solving?”
- “To nap or not? Effects on procedural memory”
- “Daily and weekly variation in college students’ sleep”

- ***Intention: to involve students in all aspects of psychological research***
- ***Unscripted challenge: a time-intensive course requiring special training on equipment; class composition issues***

Research in a Cognitive Psychology Lab (Jay)

- Equipment: Superlab PRO
- Configures presentation and reaction time recording for various stimuli, usually words
- Some research is paper-and-pencil



Upper Level Research Courses

- *Ergonomics and Environment*
- *Human Communication and Perception*
- Both courses have a research component: Students work in 2-3 person teams to come up with hypothesis, design the variables, collect data from classmates and friends (not our departmental subject pool)
- Write APA-style paper. Sometimes this is basis for further studies where student becomes a Research Assistant or does independent Research in Psychology

Examples of research in cognitive psychology

- In *Human Communication and Perception*:
 - “Lexical decision task with taboo and non-taboo words”
 - “Gesturing while giving driving directions”
- In *Ergonomics and the Environment*:
 - “Cognitive maps and wayfinding”
 - “Automobile driving and cell phone use”