Strengths and Challenges of a Sophomore Level Research Experience:
A Brainstorming Session

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## Overview

Advanced Research focuses on the logic of the scientific method, research design, readings from the scientific literature, and scientific report writing. Students participate in the evaluation, design, implementation, and analysis of experiments (both as experimenters and participants), conduct and present research, and write research reports. The course is typically completed during the first semester of the sophomore year; is preceded by courses in research methods and statistics; requires students to collect, analyze (via SPSS), and present data; and has a typical enrollment of 12 students. Students work and are graded individually, and select their own research topic/project to pursue (with instructor guidance).

## Course Assignments

**Pilot Study:** Each student is responsible for developing an experiment, collecting data, analyzing results, developing a power point (keynote or Prezi) presentation summarizing the experiment (including, but not limited to, past research, current methodology, statistical results, and interpretation), and presenting results to the class. The experiment must have *at least* eight *empirical* articles that serve as its basis. The experiment must have (at least) two independent (or predictor) variables and two dependent (or predicted) variables. Participants for the pilot study consist of students enrolled in the class (student researchers do not participate in their own experiments).

    **Associated Assignments:**

        **-Pilot Study - Literature Review and Methodology - Oral Presentation**: Students present their pilot literature review and methodology prior to collecting data. Students must integrate articles to develop a summary of past research (to be presented to the class), and present three hypotheses based on the empirical articles. All measures/materials to be used in the experiment are obtained and/or developed by the time of this presentation. All procedures to be used in are developed by this time.

        **-Pilot Study – Literature Review and Methodology Paper:** An APA style paper presenting the literature and proposed methods.

        **-Conducting Pilot Study:** Consists of a data collection session for the pilot study. Students enrolled in the course serve as participants.

        **-Presentation of Pilot Study Results:** An APA style presentation of this research (including literature review, methods, analysis and results, and discussion).

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**Final Research Project:** Essentially a replication of the pilot study, with data now being collected outside of class.

        **Associated Assignments:**

                **-Final Research Project Approval:** Instructor approves all articles and all final research projects *at least* three weeks prior to the presentation of final research project results in class.

                **Presentation of final research project results:** Includes same components as pilot study, but now for the final project results.

                **APA style report of final research project:** Includes literature review, methodology, analysis and results, and discussion.

**Course Grade Breakdown**

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|---|---|
| Participation/Serving as Subjects | 8% |
| Pilot Experiment | |
|     Literature Review/Methodology - Oral Presentation | 10% |
|     Literature Review/Methodology - Paper | 20% |
|     Conducting/Data Collection for Pilot | 2% |
|     Results of Pilot Oral Presentation | 10% |
| Final Research Project | 50% |
|     20% Oral Presentation | |
|     30% Final Research Project Paper | |

**Discussion/Brainstorming**

Please consider a similar course that you have taught in the past. Please envision the structure and assignment of said course.

-Please consider the top two strengths of a similar course that you have taught. How can others capitalize on these strengths?

-Please consider the top two challenges of a similar course that you have taught. How can others address these challenges?

-If you were to give just one piece of advice to a novice about to teach the course, what would it be? Explain.