Research Methods in Psychology (PSY 303) – Learning Objectives and Benchmarks

Students in Research Methods (PSY 303) learn about a variety of methods employed in psychological science research studies and about issues that arise in psychological research. Combined with their training in Statistical Methods (PSY 302), students improve their skills in becoming critical evaluators and consumers of psychological research reported in scientific literature and popular media.

Students in PSY 303 also learn the skills needed become effective producers of basic psychological research. This includes, among other skills, how to locate relevant research literature, formulate hypotheses based on this literature, design ethical studies to test these hypotheses (including collection of and/or analysis of data), draw appropriate conclusions from data, and practically discuss conclusions in light of prior research. Additionally, students get practice in effective communication of research findings by writing high quality research reports.

Here, we specify both the broad principles and specific skills students will learn.

PRINCIPLES:
Being a critical consumer and ethical producer of scientific information requires understanding the extent to which particular methodologies are appropriate for examining particular hypotheses, what conclusions can and cannot be drawn on the basis of those methodologies, and what constitutes ethical research practice. Students will learn how to:

1. Recognize, evaluate, and distinguish measured from manipulated variables and conceptual from operationalized variables.

2. Recognize, evaluate, and distinguish between the types of claims (i.e., arguments) typically made by scientists, including *frequency* claims (the frequency, level, or rate with which some variable occurs), *association* claims (whether one variable systematically changes as one or more other variables change), and *causal* claims (whether changes in one or more variables cause changes in another variable).

3. Recognize, evaluate, and distinguish between the different forms of validity used by scientists to support claims. Students will also evaluate claims on the basis of different forms of validity. This includes (among others) the "Big 4" validities: *construct* (whether a variable is measuring/manipulating what it purports to measure/manipulate), *statistical* (whether a particular statistical method supports a particular conclusion), *internal* (whether other explanations for a finding are possible), and *external* (the extent to which a finding can be generalized beyond a particular sample or study).

4. Conceptual and statistical moderation (i.e., interaction) from mediation (i.e., explanatory mechanism).

5. Students will also learn a) how to conduct ethical research in psychology, and b) the importance of using multiple levels of analysis, finding convergent evidence, and replicating studies.

SPECIFIC SKILLS:
Students will also learn how to:

4. Use theory and critical thinking to formulate reasonable and sound hypotheses.

5. Use online databases (e.g., PsychNET, Pubmed) to search for research articles.

6. Write concise, logical, and well-organized research reports that organize background information and present hypotheses, describe methods and results, and discuss conclusions, integrating findings into a broader research base, using APA style.