CHDV 250
Study Guide Exam #2 (5/15)

The exam consists of both short answer and short essay questions, as well as some statistics computations/interpretation. You may use class notes and handouts, along with your textbook during the exam. Please bring a calculator (no cell phone, please) and a blue book with you to the exam. The exam will be written from the terms and concepts listed below.

Experimental Design/Methods con’t (Ch. 9)
factorial designs (advantages)
ways to increase design complexity
levels and variables
interactions in factorial designs (be able to identify and graph, as done in class)

Quasi-experimental, correlational and developmental designs (Ch. 10)
time series designs/ interrupted time-series
causal-comparative designs and how to strengthen comparison (e.g., matching)
non-equivalent control group design
correlational vs. experimental strategies
correlation coefficients (be able to interpret)
positive, negative relationships
curvilinear relationships
problems with interpreting correlations
third variables and partial correlations
Multiple regression and factor analysis
longitudinal vs. cross-sectional designs and advantages and disadvantages of each
cohort effect – how cohort affects the interpretation of both designs
longitudinal-sequential and cohort-sequential designs
microgenetic method – advantages/disadvantages of the method/when useful

Analyzing Quantitative data (Ch. 11 + supplementary reading)
inferential vs. descriptive statistics
differences can be due to IV, confound, or error
role of probability/chance in statistics
hypothesis testing
null hypothesis/experimental hypothesis
fail to reject vs. reject
statistical significance
type I/type II error
power and what increases power
statistical significance vs. practical significance
increasing the complexity of designs (and advantages of doing so)
increase the number of levels or number of dependent variables
factorial designs
main effects and interaction effects
mean comparisons:
- *t-test (t = association/lack of association)
- One-way Analysis of Variance (ANOVA)
- Factorial designs and Two-way ANOVA
tests of association:
- *Pearson r
- Multiple regression (R and $R^2$)
- *Chi-Square - $\chi^2$ (categorical data)

* Note: you should be able to compute and interpret these tests and interpret SPSS printouts for tests conducted on SPSS homework.
Qualitative designs (Ch. 5, 6)
ethnography
phenomenological research
narrative analyses
case studies
steps in conducting qualitative research:
sampling issues (purposeful sampling)
foreshadowed questions
methods for data collection (be able to evaluate):
  • observation
  • interviews (one on one/focus groups/email/telephone)
  • analysis of documents and audiovisual materials
techniques for effective interviews and observations
interview/observation protocols
key informants
evaluating qualitative design: credibility, dependendibility, transferability, promoting action

Qualitative analysis (Ch. 7)
Steps in Qualitative analysis
grounded theory
The coding process (thick descriptions, developing themes)
Ways to report Qualitative data (Table 7.2)

Action Research & Mixed Methods, (Ch.12)
characteristics of action research
critical action research
ethics in action research
steps in conducting action research
evaluating action research/ triangulation
mixed methods designs - define and what they accomplish?
how qualitative and quantitative are combined: explanatory, Exploratory, Triangulation designs
steps and considerations in mixed designs

Some sample essay questions (representative, but not exhaustive)
1) Consider the following research question:
   A social psychologist believes that children who spend a great deal of time in passive forms of activity do not have ample opportunities to engage in social interaction with other children. Hence, she believes children who play video games more than ten hours a week will have poorer quality peer relationships than those who do not.
   Design two studies that test this question: one that is correlational and one that is experimental. What is the difference between these two studies in what they allow you to conclude about the relationship between video game playing and peer relationships?

2) What role do microgenetic designs play in the study of change? Give an example where a microgenetic design might prove useful and discuss the limitations of such a design.

3) Describe the steps involved in the process of collecting, analyzing and interpreting qualitative data. As an example, how might you as a researcher go about collecting, analyzing and interpreting data for a qualitative study on student teachers’ responses to student teaching? Justify your choices.

4) What is action research? What are the basic steps in action research and what are some techniques that are typically employed using this approach?

5) Describe the logic behind hypothesis testing. What process does a researcher go through in establishing whether a finding is “statistically significant” (and what does this mean)? What are type I error and type II error and how can the probability of these errors be reduced?

6) What is power and how can it be increased? How does power help to explain nonsignificant results?

7) What does it mean for something to be statistically significant? Can a result be statistically significant but not practically significant? Explain.