

EXS 511 Advanced Statistics in Exercise Science

Spring 2011

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SUNY Cortland



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Course Intro

- Overview of Syllabus
- Texts and readings
- Assignments

- Expectations

Introductions



Scientific Method

1. Developing the problem
2. Formulating the hypothesis
3. Gathering the data
maximize internal and external validity
- 4. Analyzing and Interpreting the results**
 - a) **apply appropriate statistic(s) correctly**
 - b) **make accurate interpretations**
5. Repeat

Types of Variables

- Independent Variables (IV)
- Dependent Variables (DV)
- Irrelevant Variables
- Confounding Variables
 - When irrelevant variables change systematically across conditions

Review of various types of research

- Experimental Research
 - manipulate treatments and conditions
- Descriptive Research
 - Questionnaires, interviews, normative
- Other descriptive research
 - case studies, observational research, developmental studies, correlational studies, validation studies, epidemiological studies
- Analytical – meta-Analysis studies
- Less likely in Exercise Science
 - Analytical - historical research, philosophic research, reviews

Levels of Measurement

- Nominal
- Ordinal
- Interval
- Ratio


Other data classifications

- Continuous data
- Discrete data
- Categorical

SPSS - Statistical Package for the Social Sciences

- Software used to perform statistical techniques to test an hypothesis
 - You will need to know how to design your study
 - You will need to know the type(s) of data you have
 - You will need to know what exact stat to run
 - You will need to know how to execute the statistic's commands correctly
 - You will need to know how to interpret the results
 - You will need to know how to report results

Let's take a look at SPSS

- Click on PASW Statistics 18 icon 
- Data editor window
- Output window

For next week

- Read assigned chapters for this week (T&N:1 & 6 and SPSS: 1)
- Try to read (or at least look over) readings for next week!
- Read SPSS chapter 2 and complete the data entry exercises on pp 47-49 and save the two data files. Save them to your flash drive or google apps
- Bring SPSS text to class (each week)
- Bring your flash drive and ID card to class (each week)

