

EXAM 1 REVIEW

CHAPTER 1

- **Know the differences between the ways people learn about behavior** (e.g., intuition, authority, empiricism)
 - **Intuition** (hunch or instinct) & **Authority**: Great help generate ideas for research, but they are not scientifically tested.
 - **Empiricism**: the scientific approach. Knowledge based on observations.
- **Know Goodstein's evolved theory of science**
 - Data play a central role. However, observations can be criticized
 - Scientists are not alone. Alternatives can be suggested.
 - Science is adversarial and data collection methods can be called into question.
- **Understand the concepts of falsifiability, peer review, and pseudoscience**
 - **Falsifiability**: Testable scientific ideas that can be falsified by data
 - **Peer review**: Process of evaluation of the research before it is published in a journal
 - **Pseudoscience**: Fake science in which scientific terms and demonstrations are used to substantiate claims that have no basis in scientific research

CHAPTER 1 (CONT.)

- **Know the four goals of behavioral science**
 - Predict behavior
 - Determine the causes of behavior
 - Explain behavior
 - Describe behavior: This can be achieved through careful observations of things that are directly observable or through things that are less observable, such as self-report measures.
- **Know the three elements for inferring causation**
 - Determining the causes of behavior
 - **Temporal precedence**: Temporal order of events in which the cause precedes the effect
 - **Covariation of cause and effect**: Effect occurs only in the presence of cause
 - **Elimination of alternative explanations**: Nothing other than causal variable could be responsible for the observed effect
- **Know the similarities and differences between basic and applied research**
 - **Basic**: Attempts to answer fundamental questions about the nature of behavior
 - **Applied**: Conducted to address issues in which there are practical problems and potential solutions

CHAPTER 2

- **Know the difference between prediction and hypothesis**
 - **Hypothesis**: Tentative idea or question waiting for evidence to support or refute it (Example: Do males and females differ in their use of cell phones while driving?)
 - **Prediction**: Is a guess at the outcome of an hypothesis (Example: Females are more likely to use a cell phone while driving.)
- **Know the different sources of ideas for research**
 - Common sense
 - Observation of personal and social events
 - Theory: Systematic body of ideas about a particular topic
 - Organize and explain; Generate new knowledge; Can be modified by new research
 - Past research
 - Practical problems
- **Know the different search strategies used in PsychINFO and how they work.**
 - The use of search fields such as TITLE and AUTHOR
 - The use of AND, OR, and NOT.
 - The use of the wildcard asterisk (*).

CHAPTER 2

- **Know what is contained in each section of an APA research paper**
 - **Abstract**: Summary of the research report
 - 120 words or less.
 - Hypothesis, procedure, and the broad pattern of results. Last part of an article to be written
 - **Introduction section**: Outlines the investigated problems
 - Past research and theories relevant to the problems described
 - Formal hypotheses or specific expectations of the present research are introduced and connected to past research
 - **Method section**: Overview of design
 - Characteristics of participants
 - Procedure
 - Equipment or testing materials
 - **Results section**: Findings presented by the researcher
 - Description in statistical language
 - May have Material in table or graphs
 - **Discussion section**: Reviews the research from various perspectives
 - Explains how the results compare with past results
 - Includes suggestions for practical applications and for future research on the topic
 - Presents methodological weaknesses and/or strengths

CHAPTER 3

- **Know the five principles of the APA Ethics Code**
 - **Beneficence**:
 - Need for research to maximize benefits and minimize any possible harmful effects of participation
 - **Fidelity and responsibility**:
 - Psychologists establish relationships of trust with those with whom they work
 - **Integrity**:
 - Seek to promote accuracy, honesty, and truthfulness in the science, teaching, and practice of psychology
 - Do not steal and cheat or engage in fraud, subterfuge, or intentional misrepresentation of fact
 - **Justice**: Psychologists recognize that fairness and justice entitle all persons:
 - Access to and benefit from the contributions of psychology
 - Equal quality in the processes, procedures and services being conducted by psychologists
 - **Respect for persons**:
 - Respect the dignity and worth of all people, and the rights of individuals
 - Are aware that special safeguards may be necessary to protect the rights and welfare of persons or communities
 - Are aware and respect cultural, individual, and role differences
 - Try to eliminate the effect of biases on their work

CHAPTER 3

- **Know risk-benefit analysis**
 - **Risk-benefit analysis:** Examine potential risks and benefits that are likely to result from the research
 - Risks in psychological research
 - Physical harm, Psychological stress, Loss of privacy and confidentiality
 - Potential benefits of psychological research
 - Educational, new skill acquisition, or treatment for a psychological or medical condition; Material benefits; and Personal satisfaction
- **Understand informed consent**
 - Potential participants in a research project are provided with information that might influence their active decision
 - Autonomy issues should be considered and respect for the dignity and worth of all people, and the rights of individuals
- **What is needed when minors are used in research**
 - **Assent** - Agreement by a minor in which a written consent form signed by a parent or guardian is required

CHAPTER 3

- **Know about the use of deception and debriefing subjects**
 - **Deception:** Occurs when there is active misrepresentation of information about the nature of a study
 - **Debriefing:** Occurs after completion of the study
 - Opportunity for the researcher to deal with issues of withholding information, deception, and harmful effects of participation
 - Explains why deception was necessary
 - Provides additional resources, if necessary
- **Know when a study is exempt, at minimal risk, and greater than minimal risk**
 - **Exempt research:**
 - Risk free, Review is not required
 - **Minimal risk:**
 - Risk of harm is no greater than risk encountered in daily life or routine tests, Routine review conducted by the IRB
 - **Greater than minimal risk research**
 - Thorough review conducted by the IRB

CHAPTER 3

- **Know the difference between fraud and plagiarism in research**
 - **Fraud:**
 - Fabrication of data
 - **Plagiarism:**
 - Misrepresenting another's work as your own
 - **Word-for-word plagiarism:** Writer copies a section of another person's work word-for-word without providing:
 - Quotation marks or citation
 - **Paraphrasing plagiarism:** Words are indirectly copied, but the ideas are copied without attribution
- **Understand the issues surrounding the misrepresentation of research findings.**
 - Misrepresentation of research findings devalues scientific research as a whole.

CHAPTER 4

- **Understand construct, internal, and external validity**
 - **Construct validity**
 - Adequacy of the operational definition of variables
 - **Internal validity**
 - Ability to draw conclusions about causal relationships
 - **External validity**
 - Extent to which results can be generalized to other populations and settings
- **Understand the different relationships between variables (i.e., positive, negative, curvilinear, and no relationship)**
 - **Positive linear relationship**
 - Increase in one variable results in increase in another
 - **Negative linear relationship**
 - Increase in one variable results in decrease in another
 - **Curvilinear relationship**
 - Increase in one variable result in systematic, increase and decrease in another
 - **No relationship**
 - Flat-line graph

CHAPTER 4

- **Know the benefits of operationally defining a variable**
 - Set of procedures used to measure and manipulate variables
 - Provides the information needed so a variable can be studied empirically
 - Help communicate ideas to others
 - **Construct validity:** Adequacy of the operational definition of variables. Does the operational definition of a variable actually reflect the true theoretical meaning of the variable?
- **Understand the nature of confounding and extraneous variables**
 - **Third-variable or confounding variable:** Relationship between two variables because of extraneous variable

CHAPTER 4

- **Know the difference between independent and dependent variables**
 - **Independent variables**
 - Considered to be the cause
 - Usually manipulated by the researcher
 - **Dependent variables**
 - Considered to be the effect
 - Usually measured by the researcher
- **Understand the differences between nonexperimental and experimental research methods and the negative and positive aspects associated with each.**
 - **Nonexperimental method**
 - Direction of cause and effect cannot be determined
 - Third-variable or confounding variable: Relationship between two variables because of extraneous variable
 - **Experimental method**
 - Experimental control: Extraneous variables are kept constant
 - Randomization: Extraneous variables are eliminated

CHAPTER 5

- **Understand reliability and the difference between test-retest, interrater, item-total, and split-half reliability**
 - **Reliability:**
 - deals with the consistency or stability of a measure of behavior
 - True score: is the real score on a variable
 - Measurement error: is a measurement that produces unreliable scores
 - **Test-retest reliability:**
 - Assessed by measuring the same individuals at two points in time
 - **Split-half reliability:**
 - Correlation of the total score on one half of the test with the total score on the other half
 - **Item-total:**
 - Correlation of each item score with the total score based on all items
 - **Interrater reliability:**
 - Correlation between the observations of raters
- **Understand Pearson product-moment correlation coefficient, why it's used and what the range of scores mean**
 - **Pearson product-moment correlation coefficient:**
 - Ranges from 0.00 to +1.00 and 0.00 to -1.00
 - Determines the strength and direction of the relationship

CHAPTER 5

- **Understand content validity, face validity, predictive validity, concurrent validity, convergent validity, and discriminant validity**
 - **Content Validity:**
 - Content of the measure is linked to the universe of content that defines the construct
 - **Face Validity:**
 - Content of the measure appears to reflect the construct being measured
 - **Predictive Validity:**
 - Scores on the measure predict behavior on a criterion measured at future time
 - **Concurrent Validity:**
 - Scores on the measure are related to a criterion measured at the same time (concurrently)
 - **Convergent Validity:**
 - Scores on the measure are related to other measures of the same construct
 - **Discriminant Validity:**
 - Scores on the measure are not related to other measures that are theoretically different

CHAPTER 5

- **Know the four scales of measurement: nominal, ordinal, interval, and ratio**
 - **Nominal:**
 - Categories with no numeric scales
 - **Ordinal:**
 - Rank ordering. The numeric values are limited.
 - **Interval:**
 - Numeric properties are literal. Assume equal interval between values.
 - **Ratio:**
 - indicates absence of variable
- **Understand reactivity and ways to minimize it**
 - Measure is reactive if awareness of being measured changes an individual's behavior
 - Measures of behavior vary in terms of their potential reactivity

LAB

- **Begin Writing Your Research Proposal and Developing a Game Plan for Your Group Research Project!**
 - **Must Write Individual Papers for Group Projects**
 - Now's the time to ask me questions about writing a formal APA research paper
 - Find articles to support your research and to include in your literature review
 - Find surveys and/or other instruments you will use for your research
 - Develop a game plan for recruiting participants and obtaining data
 - Set Dates, Meeting times, and places
 - Assign responsibilities to group members
 - Exchange emails & phone numbers with your group members

Happy studying!

