EPSY Core Exam Competency List
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1. **Educational Psychology (Foundations and Learning Theory)**

   1. Education research as a science
   2. History and systems of educational psychology: contributors, theoretical framework
   3. Learning theory
      a. Behaviorism
      b. Cognitivism
      c. Socialcultural theory
   4. Teaching theory
   5. Measurement and Individual Differences
   6. Cognition

2. **Human Development/Life Span**

   1. Developmental theory and concepts
   2. Physical growth and change across the lifespan
   3. Cognitive development
      a. Theoretical views
      b. Memory and intelligence
      c. Language development
   4. Social development
      a. Self-development
      b. Temperament/personality
      c. Emotional development
      d. Identity
      e. Moral reasoning
      f. Gender role
      g. Relationships (family, peers)
      h. Lifestyle patterns
      i. Vocational issues

3. **Statistics/Quantitative Data Analysis**

   Students are expected to be able to understand and apply the following:
   1. Various measures of central tendency (mode, median, mean) and know what data features affect them.
   2. Various measures of variability (range, sum of squares, variance, standard deviation) and know what data features affect them.
3. Various measures of distributional shape (skewness, kurtosis) and know what data features affect them and their relationship to the normal curve.
4. Pearson r as a measure of correlation and know what data features affect this relationship statistic.
5. The nature and function of Z scores and their relationship to the normal distribution
6. Principles and process of null hypothesis significance testing, including the roles of Type I and II errors, alpha, p values, and standard error.
7. The relationship between statistical power and sample size, effect size, and alpha.
8. Use and interpretation (including effect sizes) of mean comparison tests including t-tests and one-way ANOVA, including the reason for and role of post hoc tests.
9. Use and interpretation (including effect sizes) of multiple factor mean comparison tests (factorial ANOVA) and relevant interactions.
10. Confidence intervals as measures of statistical precision.

4. Research Methods

Students are expected to know and understand each of these concepts and apply these techniques to real research questions:
1. Types of inquiry and reasoning (inductive/deductive)
2. Theories/axioms/hypotheses - definitions, types, and basic details, definition of variable
3. Validity and reliability - definitions, types, threats to each
   Research designs
4. Survey research
5. Qualitative field research
6. Experimental/Quasi-experimental design
7. Quantitative data analysis
8. Ethics in research (including historically important experiments that influenced research ethics)
9. Correlation vs causality differences
10. Sampling