**Research Question:**

Gender and college of major were recorded for participants. We then examined participant computer anxiety (how anxious they feel using computers), technical experience (how much they’ve used various forms of technology), and computer experience (how much they’ve used different types of computers). We wanted to know if there was an interaction between gender and college of major predicting overall experience in the college (technical and computer) with first controlling for computer anxiety. This analysis will help determine if colleges are delivering different types of computer/technical experience (which is important for job/graduate school applications).

**Dependent variables:**

* Techexperience – technical experience average score using a scale that asked about a lot of different technical variables (printing, smart phones, programs)
* Compexperience – computer experience average score using a scale that asked about a lot of different computer questions (windows/mac/linux, settings, programs)
* Both variables – higher scores equal more experience, scores range from 1 – 9.

**Independent variables:**

* Sex – gender of the participant
* College – arts and social sciences versus more traditional sciences colleges

**Covariate:**

* Computeranxiety – questionnaire with questions that ranged from 1 – 6 asking about different computer experiences and how anxious/nervous each made the participant. Higher scores indicate more anxiety.

1. Data screening:
   1. Accuracy:
      1. Include a box with minimum / maximum scores to show the data are accurate.
   2. Missing data:
      1. Include a box with a missing data line to show the data has/has no missing data.
      2. Fix/list what you did with the missing data if necessary.
   3. Outliers
      1. What are the top 5 Mahalanobis scores?
      2. What is the cut off for Mahalanobis (*df* and *X2*)?
      3. Delete any multivariate outliers.
   4. Multicollinearity:
      1. Include a correlation table.
      2. Are the DVs too correlated (no need to check the CV since we only have one)?
   5. Normality
      1. Show skew and kurtosis for the CV/DVs.
      2. Include the multivariate normality chart.
      3. Is the data normal?
   6. Linearity
      1. Include the PP Plot.
      2. Is the data linear?
   7. Homogeneity/Homoscedasticity
      1. Include the residuals graph.
      2. Is the data homogeneic?
      3. Is the data homoscedastic?
2. MANCOVA
   1. Include the descriptives box.
   2. Include Box’s Test.
   3. Include the MANCOVA box.
   4. Include Levene’s Test.
   5. Include the Between Subjects ANCOVAs.
   6. Fill out the following chart – remember if your values stop being significant, you would stop filling in values for that column. (you will be replacing my notes with APA statistics or interpretations – like male > female).
      1. Remember, you read this box going down – similar to the flow charts we made in class.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | MANCOVA Results | | |  |
| APA statistic | Gender:  FILL IN HERE | College:  FILL IN HERE | Interaction:  FILL IN HERE | Anxiety:  FILL IN HERE |
|  | ANCOVA Results | | |  |
| APA statistic  DV: Tech Exp | Gender:  FILL IN HERE | College:  FILL IN HERE | Interaction:  FILL IN HERE | Covariate:  FILL IN HERE |
| APA statistic  DV: Comp Exp | Gender:  FILL IN HERE | College:  FILL IN HERE | Interaction:  FILL IN HERE | Covariate:  FILL IN HERE |
|  | Post Hoc Results | | |  |
| APA statistic  DV: Tech Exp | Only two levels, talk about means | Only two levels, talk about means | Independent *t* | Correlation |
| APA statistic  DV: Comp Exp | Only two levels, talk about means | Only two levels, talk about means | Independent *t* | Correlation |

1. Charts:
   1. Create interaction graphs (clustered bar charts) for each DV.
   2. Be sure to format:
      1. X axis label
      2. X group labels (including legend)
      3. Y axis label
      4. Y axis length
      5. Error bars
2. Write up
   1. Short description of the variables (DVs, IVs, CV).
   2. Be sure to include data screening information.
   3. MANCOVA information:
      1. Type of MANOVA using the number system (i.e. 4X3 between subjects).
      2. F-values for all three effects (two main effects and interaction) even if they are non-significant.
      3. F-value for the covariate even if they are non-significant.
   4. ANCOVA information:
      1. F values for all DVs for significant MANCOVAs (includes IVs and CVs).
      2. List those F values even if they are non-significant (not the non-significant MANCOVA ones, but if one DV is p = .01 and one is p = .10 list both).
   5. Post hoc information:
      1. Description of what the ANCOVA results mean for the two level variables (i.e. just talk about it since you don’t have to run another test).
      2. Correlations for ANCOVA covariate results.
   6. Graph for means for DVs (there should be several graphs – see rules above).