***t* Tests (Due Week 6)**

**Assignment Instructions**

You will analyze the following variables in the **grades.sav** data set:

* **gender**, **gpa**.

**Step 1: Write Section 1 of the DAA**

* Provide a context of the **grades.sav** data set.
* Include a definition of the specified variables (predictor, outcome) and corresponding scales of measurement.
* Specify the sample size of the data set.

**Step 2: Write Section 2 of the DAA**

* Analyze the assumptions of the *t* test.
* Paste the SPSS histogram output for gpa and discuss your visual interpretations.
* Paste SPSS descriptives output showing skewness and kurtosis values for gpa and interpret them.
* Paste SPSS output for the Shapiro-Wilk test of gpa and interpret it.
* Report the results of the Levene test and interpret it.
* Summarize whether or not the assumptions of the *t* test are met.

**Step 3: Write Section 3 of the DAA**

* Specify a research question related to gender and gpa.
* Articulate the null hypothesis and alternative hypothesis.
* Specify the alpha level.

**Step 4: Write Section 4 of the DAA**

* Paste the SPSS output of the *t* test.
* Report the results of the SPSS output using proper APA guidelines (refer to the "Results" example of the Warner text in Chapter 5).
  + Include:
    - *t*.
    - Degrees of freedom.
    - *t* value.
    - *p* value.
    - Effect size.
    - Interpretation of effect size.
    - Means and standard deviations for each group.
    - Mean difference.
    - 95% confidence interval of the difference of sample means.
* Interpret the results against the null hypothesis.

**Step 5: Write Section 5 of the DAA**

* Discuss the implications of this *t* test as it relates to the research question.
* Conclude with an analysis of the strengths and limitations of *t* test analysis.

Submit your assignment as an attached Word document in the assignment area.