SPSS2 Interpretation Practice 2

Fifty college applicants either took part in standard study methods (standard) for the SATs (e.g., using self-help books like Barron's or the Princeton Review), or they took part in a special 16 hour SAT workshop in addition to their normal studying (advanced). The data consist of their condition (standard vs. advanced), their gender, their SAT verbal scores, their confidence that they will perform well in college prior to studying for the SATs, and their confidence that they will perform well in college after studying for the SATs.

1. The results below represent a one-sample t-test examining whether SAT verbal scores for those who received the advanced training differ significantly from that of the population as a whole.

   a. Report the findings of this hypothesis test in APA format and include the effect size along with the means and standard deviations.

   b. Report the findings for a 90% confidence interval. In your own words, between what two population means are you 90% certain the sample came from?

   c. Interpret the standard error of the mean. What is this statistic telling you?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
sat verbal scores	25	589.20	124.362	24.872

One-Sample Test

	Test Value = 500					
					90% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
sat verbal scores	3.586	24	.001	89.200	46.65	131.75

2. Here are the results for the analysis comparing SAT verbal scores between the advanced and standard training conditions.

a. Write up the results of the analysis in APA format.

b. Explain whether homogeneity of variance has been violated. Also, explain how you know this, what part of the output gives you this information, and interpret what it means.

Group Statistics

	training	N	Mean	Std. Deviation	Std. Error Mean
sat verbal scores	standard	25	542.80	93.831	18.766
	advanced	25	589.20	124.362	24.872

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
sat verbal scores	Equal variances assumed	1.664	.203	-1.489	48	.143	-46.400	31.158	-109.047	16.247
	Equal variances not assumed			-1.489	44.637	.143	-46.400	31.158	-109.169	16.369

3. Participants in both conditions reported their confidence levels prior to studying and after studying for the test. The purpose of the analysis was to determine if the group that received the advanced training differed significantly in confidence levels before and after studying. Examine the output below of a related samples t-test on confidence and write up the results of the test in APA format in a summary paragraph. Be sure to include the means and standard deviations in the write up. Include the effect size as well (i.e., Cohen's d).

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	confidence before studying	6.24	25	2.488	.498
	confidence after studying	8.56	25	1.261	.252

Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1 confidence before - confidence after	-2.320	2.340	.468	-3.286	-1.354	-4.957	24	.000