Does Memory Training Help? Part 2

Suppose that 32 seniors were randomly selected to try both memory strategies. Each student calculated the difference in the # words (Strategy 2 – Strategy 1). The mean of the differences was $\bar{x}_{diff} = 1.5$ and the standard deviation of the differences is $s_{diff} = 2.7$. Do these data give convincing evidence that strategy 2 improves memory at the α = 0.05 significance level?

STATE: Parameter: Statistic:

Hypotheses: Significance level:

PLAN: Name of procedure:

Check conditions:

DO: General Formula: Picture:

Specific Formula:

Work: Test statistic:

P-value:

CONCLUDE:

Significance Test for A Mean of Differences

Important ideas:

Check Your Understanding

In each of the following settings, decide whether you should use two-sample t procedures to perform inference about a difference in means or paired t procedures to perform inference about a mean difference. Explain your choice.

1. A random sample of 30 adults were selected. Each adult reported the number of pieces of junk mail they received in their mailbox at home that day as well as the number of junk emails they received in their inbox that day. A researcher would like to know if adults receive significantly more junk email than junk mail in their mailbox.

2. A random sample of 100 people who live on the west coast and 100 people who live on the east coast are selected. Each person reports how many spam calls they receive in a one-week time period. We would like to know if people who live on the west coast receive significantly more spam calls than those who live on the east coast.

3. A researcher randomly selects a variety of 15 cell phones from different manufacturers and different service providers. The researcher measures the signal strength from two different remote areas: one in the state of Pennsylvania and one in the state of Virginia. The researcher would like to know if the signal strength is significantly weaker in the remote area in the state of Virginia.

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