**Research Methods, Part 2**

**Correlation Method**

**Correlation** is a measure of the extent to which two variables change together, and thus of how well either variable predicts the other. Correlation is numerical represented with a **correlational coefficient.** This number is a statistical index of the relationship between two variables (from -1.0 to +1.0). A number near 1.0 indicates that there is a positive correlation between the two variables. The more one variable occurs, the more of the other. A number near -1.0 indicates that there is a negative or inverse relationships. The more one variable occurs, the less the other does. Sometimes there is no correlation. (close to 0) Graphically, correlations are captured in what’s called a **scatterplot.**

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Use this table to create a scatterplot and describe it as positive, negative or no correlation.

Height and Temperamental Reactivity Draw here (don’t worry about precision)

|  |  |  |
| --- | --- | --- |
| Person | Height in Inches | Temperament |
| 1 | 80 | 75 |
| 2 | 63 | 66 |
| 3 | 61 | 60 |
| 4 | 79 | 90 |
| 5 | 74 | 60 |
| 6 | 69 | 42 |
| 7 | 62 | 42 |
| 8 | 75 | 60 |
| 9 | 77 | 81 |
| 10 | 60 | 39 |
| 11 | 64 | 48 |
| 12 | 76 | 69 |
| 13 | 71 | 72 |
| 14 | 66 | 57 |
| 15 | 73 | 63 |
| 16 | 70 | 75 |
| 17 | 63 | 30 |
| 18 | 71 | 57 |
| 19 | 68 | 84 |
| 20 | 70 | 39 |

Like mentioned before, it’s important not to mistake correlation with causation. Just because something is related, doesn’t mean is causes the other thing to happen. Another thing to be cautious of is **illusory correlations**. This is the perception of a relationship where not exists. This often relates to our superstitions and emotional connections. We often only take note of the correlations that support our beliefs.

**Experimentation Method**

An **experiment** is a research method in which an investigator manipulates one or more factors (*independent variables*) to observe the effect on some behavior or mental process (the *dependent variable*). By random assignment of participants, the experimenter aims to control other relevant variables. **Random assignment** uses chance to minimize preexisting difference between groups. In an experiment, experimenters often create an **experimental group** in which people receive the treatment, and a contrasting **control group** that does not receive the treatment. Sometimes studies use **double-blind procedure** in which neither the participants or the researchers know who is in the experimental group or the control group.

Some issues that can sidetrack the experimental method include the **placebo effect** which the recipient is affected by the belief that they’ve received an active agent. An example of this is when a participant takes a sugar pill and begins to act as if they’ve actually received a psychoactive drug. Another issue may be **confounding variables** which can interfere or replace the independent variable and affect the dependent variable. Example: to determine the success of a note taking strategy, Dr. X compares exam scores in students from a parochial school who used the strategy with students from a public school who did not use the strategy. The *public/parochial school variable* would be the confounding variable because it’s a factor that may have caused the difference, not the strategy. Finally, researchers need to make sure their experiment has **validity.** Does the text/experiment actually measure/predict what it says it’s supposed to?