

1. A group of teachers gather data on the number of hours that each student works at a part-time job and the students' GPA to see if relationship exists between hours worked and high school grades.
2. A social psychologist looks at the impact that knowing or not knowing a person has on how quickly a subject will respond to distress. Time to respond is the dependent measure.
3. A researcher looks at how four different training programs affect students' test taking skills. Each group of students receives training of only one type.
4. A researcher uses heart rate as a measure of excitability in rats. He knows the average heart rate in rats and compares his sample of rats to that average. The sample has been bred with the hope that as a group the rats have a less excitable temperament.
5. An investigator tries to determine the effects of experience and education on annual income. Subjects are categorized as having one of three levels of experience and one of four levels of education. The dependent measure is annual income.

Answer Key:

1. This represents a correlation. There are two dependent measures (GPA and hours worked). These are both measured by interval or ratio level scales. Finally, the question is asking about a "relationship."
2. The dependent measure here is time to respond to a distressing event. This is a ratio level scale. There is a comparison that will take place between knowing and not knowing the subject. Because there are only two groups and one IV this would require a t test for two independent samples.
3. Presumably test taking skills are measured by the score on the test. This is going to be a ratio scale dependent variable. There is only one characteristic that each subject is exposed to and there are four

- different groups. This means that there is one IV but four groups so that a one way ANOVA is required.
4. This is a case where the population mean is known and one sample is used. The DV is heart rate - a ratio scale. This would use a t test for single samples.
 5. In this example annual income is the dependent variable. The experimenter is asking about two different IV's. One is experience level someone has and the other is the level of education. So, this is a two way ANOVA. It is a 3 x 4 factorial design.