

In the following examples, tell what type of survey design (good or bad) was used.

- a) WKRP (radio station) asks its listeners to call in their opinions regarding the current success of Cincinnati football.
  
- b) Smyth County Health Department surveys all registered O negative blood donors in the county on ways to better run area blood drives.
  
- c) WalMart of Wytheville conducts a survey of its customers to determine whether to keep the greeters or not. They select the 18th person coming in after 6 am and every 25th person after that.
  
- d) VFW Post 4667 randomly selects 40 club members from its membership list and asks them about their level of satisfaction with the post.
  
- e) Mr. Blevins takes a random sample from each class (freshman, sophomores, juniors and seniors) and asks the student's opinion regarding school uniforms.
  
- f) Loudon County School Board wants to determine the average IQ of 9th grade students. From a list of the 28 high schools in the county, an administrator randomly selects five schools and then has the IQ test administered to all 9th grades in that school.

Identify the following survey design flaws or possible bias issues:

- a) MSHS randomly surveys students in the cafeteria during breakfast to determine why kids don't eat breakfast at school.
  
- b) MSHS tries to determine student employment. One survey question is "How long do you study?"
  
- c) Sgt Bookem administers a survey to randomly selected homerooms on illicit drug use among teenagers in Smyth County.
  
- d) Smyth Country sends 400 surveys about school home to parents with more than one child enrolled in Smyth County Schools and they get 23 surveys back.

1. To help assess student learning in his literature class, an English teacher implemented pre lesson and post-lesson tests for his students. A knowledge-gained score was recorded after the lesson was taught by taking the difference of the two test scores for each student.

- a) What type of experimental design was this?
- b) What was measured (response variable) in this experiment?
- c) What treatment was applied to the subjects?

2. A researcher randomly divided up 220 volunteers into two groups. She asked one group to go to sleep no later than 10:30 each night for a month. The other group was asked to stay up to 11:30 each night. Each volunteer logged into a web site in the morning and took a test that evaluated their restfulness.

- a) What type of experimental design was this?
- b) What was measured (response variable) in this experiment?
- c) What treatment was applied to the subjects?

3. A researcher studying hair health divided up 150 volunteers based on gender into two groups (male and female). He had a dermatologist evaluate the health of their hair and scalp. He then randomly assigned one of three different types of shampoo to each volunteer. After a month he had the dermatologist reevaluate the health of their hair and scalp.

- a) What type of experimental design was this?
- b) What was measured (response variable) in this experiment?
- c) What treatment was applied to the subjects?
- d) What type of blinding could have been done?

Go to the [Khan Academy lesson](#): and answer the questions on experiment versus observational study

Problem 1a)  
1b)

Problem 2a)  
2b)