

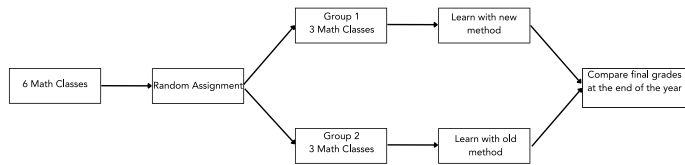
1.
 1. Comparison – This experiment includes four treatment groups (showing “true” or “false” labels before, during, after, or not at all) for comparison.
 2. Random assignment – The researchers randomly assigned participants to one of four treatment groups.
 3. Replication – Each treatment group has more than one person.
 4. Control – All 2,683 participants were shown the same 18 true news headlines and 18 false news headlines. The only systematic difference between groups was if and when the “true” and “false” labels were shown.

2.
 - a. Random assignment tends to balance the effects of uncontrolled (confounding) variables, such as student motivation, so that differences in responses (student test scores) can be attributed to the treatments (review sheet or not), thus allowing for the possibility of a cause-and-effect conclusion.
 - b. Assign each student a unique number between 1 and 180. Use a random number generator to select 90 numbers between 1 and 180 (no repeats). Give the students corresponding to the numbers selected a review sheet to complete before the test. The remaining 90 students will prepare for the test on their own.

3.
 - a. Double-blind means neither the patients nor members of the research team who interact with them were aware which treatment was received by each patient (omalizumab or placebo). Placebo-controlled means that some patients received an injection with no actual medicine in it to serve as a baseline for comparison to the group that received the drug with the active ingredient.
 - b. Blinding is important so the patients do not change their day-to-day activities in response to knowing which treatment they received. In addition, the members of the research team who interact with them might unintentionally interpret the results differently if they know which treatment the patients received.
 - c. The placebo is important so patients can be kept blind to which treatment they are receiving, since everyone receives an injection.

4.
 - a. The group who received no placebo treatment serves as the control group. This group serves as a baseline for comparison so the researchers can determine the effects of the treatment (placebo pill) on the response variable (improvement in IBS symptoms).
 - b. Participants experienced a response to the sugar pill (improvement in IBS symptoms) even though it contained no active ingredient to treat IBS.

5. a. (1) Comparison – There is no comparison with the 6 classes available for the study. The administrator should include a group of students who are learning from the method used in previous years.
- (2) Random Assignment – Students were not randomly assigned to treatment groups. The administrator should randomly assign 3 of the classes to be taught with the new method and 3 of the classes to use the same method as previous years.
- b.



6. A

7. B