Unit 1: Lesson 4: Project 5: A Quick Research Proposal To Prevent Cheating on Tests

Teacher Cheats Cheaters From Cheating

To prevent cheating, a teacher writes three versions of a test. She stacks the three versions together, first all copies of Version A, then all copies of Version B, then all copies of Version C.

As students arrive for the exam, each student takes a test.

When grading the test, the teacher finds that students who took Version B scored higher than students who took either Version A or Version C. She concludes from this that Version B is easier, and discards it.

Research Proposal:

Problem:

Cheating on tests makes it difficult for a teacher to know which students are gaining an understanding and retention of the material presented.

Period 4 History class scores are typically higher than all other class periods. It's not clear if students in this class are cheating, or if there is another reason why they tend to score more highly. We want to eliminate the possibility that students in this period are cheating on their exams.

Hypothesis:

If there are different versions of the same exam, it will be more difficult for students to cheat off of one another during the exam.

Methods:

Calculate the distribution of previous exam scores for this class (for previous 3 exams) and for other 3 class periods for this History class. In this way, this class period can be compared against itself in an A/A test, as well as compared against other classes in an A/B test.

Determine the distribution of scores for each exam for Period 4 and for the other periods. Complete T-tests to compare the mean test scores for each class period and determine if there is a significant difference in scores on previous 3 exams in the same class period, and across class periods this class is taught. The distribution of scores and T-test scores will provide baselines for the experiment.

Develop three different versions of the exam. To avoid introducing differences in ease/difficulty between the exams, all multiple choice questions are the same across versions. All multiple choice answers are the same across versions.

Differences in this portion of the exam include differences in the order of questions on the exam and differences in the order of answers for their respective questions.

Lastly, a short answer question will be added that requires students to think critically or reflectively on the material and encourages individual responses. The assumption is that it is more difficult to cheat on a short answer response than on a multiple choice question.

Randomly assign each student to one of these versions.

On exam day, seat students according to a predefined seating chart that identifies desks according to exam version so students with the same version of the test do not sit adjacent to one another. As usual, students are not allowed to talk or communicate with each other during the exam.

Distributions of exam scores will be calculated, along with T-tests to determine if there is a significant difference between exam scores in the same period class of students and across other classes of students taking the same exams.

If there is no significant difference between the mean scores for this exam and for previous exams in the same class or between classes, then it will be determined that students during Period 4 are achieving higher scores on their exams without cheating. No further methods will be employed to address cheating since it will be deemed unnecessary.

If there is a significant difference in the mean scores between this exam and previous Period 4 exams, then Period 4 exam scores will be compared with other class periods to rule out the possibility that this exam presented unusual challenges (which would also be evident in test scores for other period classes).

If there is a significant difference in mean test scores and it does not appear that this exam was unusually challenging (as determined by evaluating other class scores on this exam), then it is concluded that students in the class were cheating. In this case, it will be necessary to continue testing students in a way that ensures they are able to best demonstrate their actual learning and retention of the material without cheating.