

ATTENTION TO DETAILS: DOES IT FACILITATE OR IMPED LEARNING

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THE PROBLEM

When grading assignments and exams, it is very common to notice that students are not following directions. Either the students do not know the directions, or they do not bother to follow them. To answer this question, I have inserted on the instruction page of each exam two or three phrases such as “If you read this, circle... or Draw a box around” On the first exam of the semester, it is not uncommon for the median number of responses to be zero. On following exams, many more students read the instructions, but they do not necessarily follow instructions on the body of the exam. Why does this matter? The hypothesis is that if the students are not sensitive to following simple instructions, then they are more apt to ignore subtle distinctions necessary in understanding the course material. For example, when they construct a confidence interval, they may not distinguish between the mean of the population and the mean of the sample. As a corollary, I wanted to test the belief that if you could get students in the habit of following simple instructions, then they were more apt to pay attention to the details when understanding key course concepts.

METHODOLOGY

To test this idea, I compared the performance in the course with the attention to details when reading the instructions. Over several semesters in different courses the results were the same. There was no statistically significant relationship. During this time, I noticed that the weaker students often spent an excessive amount of time reading the instructions just to pick up a few more points. The better students did not bother.

The next step in an exploratory investigation was to develop a better methodology. Instead of focusing on the first page of the exam, I sought to examine the entire exam. My exams generally have ten problems. Each problem is on a separate page. The first page of each exam is one page of instructions. To be measure the instances of failure to follow instructions, I defined eleven types of failures. On an exam I tallied the number of instances of each type of failure to follow instructions. These are reported in the poster. Several students followed all instructions, but two students failed to follow instructions over 50 times. About 25% of the class failed to follow instructions over 20 times, two times for each problem. The median number of failures was about 13, almost one and a half times per question.

Failure to follow instructions was not a measure of the correctness of the work, instead it focused on the format for providing an answer or showing the work. Examples include “draw a box around your answer”, “draw a diagram when requested”, and “limit the written answer to the space provided.”

During the course, the students also submit written homework problems as well as results of classroom work with other students. When submitting this work, students are requested to follow certain formats. Examples included portrait mode, certain identifying information in the upper right hand corner, and requests to identify the problem being worked.

The results of this exploratory work and the conclusions will be found in the poster. The hope is that by creating a culture that pays attention to the details, we can better prepare students to focus on the distinctions necessary to understanding the course ideas. When one students was asked why he ignored the instructions, he replied “when studying for the SATs we were told to ignore the instructions.” This has become part of the thinking of many students. It is my belief that this attitude makes it more difficult for students to fully grasp the subtleties of statistical thinking.