What's Done on Day One? Set the Tone for the Long Run

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Abstract
When a course begins, students may not arrive with abundant background knowledge (and certainly haven't yet done any assigned reading in the textbook), but do arrive with confusion, concerns, and/or (mis)conceptions about the course and discipline. A review of the literature about "Day 1" (Lesser and Kephart, 2011) suggests that first impressions may make a lasting difference in student attitudes, motivation, etc. This paper discusses how instructors can go beyond calling roll and rolling through the syllabus and help set the tone by building classroom norms of active learning and stimulating statistical habits of mind and questioning.

Key Words: First day of class, GAISE, active learning.

1. Overview

For the benefit of those unable to attend (the table was full) on August 1, 2012, this paper gives some key ideas and references from Lesser (2012c) without duplicating the content from its main underlying references: Lesser (2012a) and Lesser and Kephart (2011). After discussing self-identified biggest "day 1" challenges (and what they have tried or thought about trying to address them), attendees then experienced two problems, contemplating each problem first as individuals, then discussing with immediate neighbors, and then reporting out to the whole table in the round. This process modelled the pedagogy described in Lesser and Kephart (2011) so that participants could experience the student point of view. The goal is for students to experience from day one some of the big picture themes and processes of the course, including how statistics is so much more than just acquiring facts or performance procedures.

2. Problems Useable on Day One

The first problem (see Table 1) participants tried is a streamlined version from Lesser (2012a), which in turn was streamlined from Lesser and Kephart (2011), which cited Movshovitz-Hadar and Webb (1998, p. 113). The streamlining involved choosing even simpler numbers (the benefits of which are included in Lesser, 2011) and having no more than the minimum required amount of information initially given. The intention of the streamlining is to help students more readily get to the essence of the problem while leaving enough open-endedness to force students to discuss how best to operationalize and answer the question. (As an aside, we note that such questions also occur in non-statistics classes, such as the discussion by Meyer (2011) comparing a round peg in a square hold to a square peg in a round hole.) The insights that emerged from the discussion of Table 1 are very similar to what is captured in Lesser (2012a) and will not be duplicated in this Proceedings paper.

Table 1: Who Did Better, Amy or Bob?

	fall		*spring*	
TESTS	*Amy*	*Bob*	*Amy*	*Bob*
Number passed	3	1	2	3
Number taken	8	3	3	5

The second problem attendees at Lesser (2012c) experienced was: "20 students are divided among four rooms as 3, 3, 4, and 10. What might you say is the 'average class size'?" This problem was part of Lesser (2012a), Lesser and Kephart (2011), and Lesser (2010), which in turn is a streamlined version of the lead posed question in Lesser (2009). One participant at Lesser (2012c) noted that the numbers 3, 3, 4, and 10 could also be given the alternative context of four states with different populations (i.e., 3, 3, 4, and 10 million), thus requiring a weighted mean to give each of the 20 million people equal weight. Other participants noted that being able to customize problems to different contexts would allow these such problems to be made relevant not just to education students, for also for business students, health sciences students, etc. Indeed, the participants at Lesser (2012c) spanned great variety in the student populations they taught, including two participants who taught in high schools. Other insights that emerged from the discussion of this problem are very similar to what is captured in those papers and will not be duplicated in this Proceedings paper.

3. Opening Activities Involving Data Collection

Another major theme of Lesser (2012c) was how and why from the first day on to use real data and active learning, which are two of the recommendations of the GAISE (ASA, 2010). It was noted that there are many collections of activities compiled (some as supplements to specific textbooks, and some as free-standing books such as Chance and Rossman, 2005) and many activities can be done with surprisingly little class time (e.g., Lesser, 2012b). Other null hypotheses that can be tested efficiently in the spirit of Lesser (2012b) include: the mean estimation error will be 5 seconds when estimating (with eyes closed and not counting) the passage of a minute of time; the mean distance travelled by a ruler will be 3" when the ruler is unexpectedly dropped by a classmate between your thumb and index finger; the mean number of words students will remember is 7 from a list of 15 sequentially-presented words (as described by Richardson & Resichman, 2011; another classroom memory activity is described in Holmes & Dodd, 2012). Another activity that introduces many concepts the course will be revisiting is to do a survey that is really an experiment (i.e., each member of the class is randomly assigned one of two slightly-different versions of a question).

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