

TALK IT OUT: HELPING STUDENTS CONQUER STATISTICS

ANXIETY

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Abstract

In this paper, the author discusses a multi-component strategy used to help graduate social science students overcome feelings of anxiety that traditionally accompany enrollment in statistics courses.

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Statistics anxiety is the unpleasant experience of being confronted with statistical content (Macher, Papousek, Ruggeri, & Paechter, 2015). This phenomenon plays itself out among my graduate students, many of whom had prior unpleasant experiences in undergraduate statistics classes. Over time, I noticed that my most anxious students felt alone in their worries, and believed they were intellectually inferior. This seemed a recapitulation of the personal fable (Arnett, 2013), which is the belief (common among young adults) that one's experiences are unique and no one else could appreciate them.

To address students' concerns, I developed a four-component mechanism to allay anxiety, build confidence, and minimize unpleasantness. This method, which requires students to communicate routinely among themselves and with me, draws on stress and social support coping theory (Cutrona & Russell, 1990; Thoits, 1986), which posits that supportive actions mitigate stress and promotive positive coping. It is also rooted in expectancy-value theory (Eccles, 1983), which posits that student achievement is determined by the extent to which they believe they can do well and the perceived utility of the material.

The first component is a poll in the initial class session to see how many students feel anxious about statistics. This gives a quick, public "pulse check". Nearly all respond in the affirmative and there is immediate relief in the room as students realize they are not alone.

The second component is a graded online discussion in week 1 in which students review two journal articles on statistics anxiety (that I furnish), and then reflect on their own anxiety. I also ask students who are not anxious to share thoughts on why others might be. All then discuss what they can do to help themselves and their peers cope with statistics-related discomfort. The goal is to have students 1) understand that their experience is a real phenomenon, 2) develop plans to build competency, and 3) enlist colleagues' help or be available to help.

The third component consists of two graded journals (one in week 1 and one in week 15). Students first identify three learning goals, that go beyond the syllabus, with both personal and professional significance to them. They later reflect on how well they did in the course, where they struggled or excelled, and where they will apply their skills in the future.

The final component consists of four graded online “check-in” discussions. In weeks 4, 8, 12, and 15, respectively, students share how the class is going, how they are doing, and what strategies they employ to help them learn. They reply to each other as well, sharing additional thoughts and offering support, encouragement, and ideas.

Analysis of the journal and discussion board content from three sections of this class reveals that, over time, students’ statistics anxiety decreases and their confidence and appreciation for the material increases. Demonstrable improvement in grades throughout the semester evidences that students develop proficiency in the course material. These are promising preliminary findings. A logical next step is to quantitatively evaluate the efficacy of this method.

References

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