

# COMPREHENSIVE WRITING ASSESSMENTS IN INTRODUCTORY STATISTICS

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Creating assessments for introductory statistics courses is not easy, particularly when the goal is to evaluate students' conceptual understanding of statistical concepts. "Understanding" is difficult to measure, but we do know it involves more than just memorization of facts or blindly carrying out mechanical data analysis procedures. This paper presents a framework for developing an assessment system in introductory statistics culminating in a series of comprehensive writing assessments that evaluate students' understandings of larger statistical concepts such as distribution and variability. The purpose of this paper is to help current and future instructors evaluate the assessment systems of their courses, where students are typically most concerned. I will discuss essays on two topics (distribution and variability) from my own introductory statistics course. In these essays, students reflect upon what they have learned, explain it to someone else, and generate examples to support their explanations. This discussion includes how I developed the assessment, how I incorporate it into the overall course structure, and student reactions to the assessment. Excerpts from over 300 student essays highlight (a) how the students reveal their conceptual understandings through writing, (b) common misunderstandings that emerge, and (c) ways I have adapted my course to better develop students' understandings of these concepts.