

What Content is Being Taught in Introductory Statistics?: Results of Nationwide Survey

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Introductory Statistics is a course commonly taken by students from a variety of wide-ranging majors, sometimes across departments; however, there is little known about the extent topics are covered generally across courses. Textbooks include more material than can reasonably be covered in a single course, but the non-linear nature of many topics means that from course to course the covered content can diverge greatly. We provide results of a nationwide survey of 148 introductory statistics instructors and assess how often concepts are covered in introductory courses across instructor experience, course audience and course pedagogy.

Keywords: Instructors, Content, Curriculum, Introductory Statistics

Introductory statistics course content varies from school to school, and instructor to instructor. The content that a student is exposed to in an introductory statistics course can vary greatly, particularly when compared to a course like Calculus I. This affects common university interactions such as transfer credits and compromises researchers' ability to generalize introductory statistics course studies to larger populations. Statistics education research papers often dedicate substantial space to articulating what content the course(s) of study covered. Yet, relatively little is known about what content is being covered in introductory statistics courses in the United States. Nationwide surveys that poll the demographics of mathematics content areas have been useful in producing recommendations for best practices in teaching the content and providing insight into areas of future research (Bressoud et al, 2015; Johnson et al, 2018). In the most recent *International Handbook of Research in Statistics Education*, researchers have called for similar efforts (Gould et al, 2018). In response we report on the content taught in Introductory Statistics based on a nationwide survey of instructors. The participants (n=148) were selected through a cluster sample of all possible 2 and 4-year institutions such that every listed instructor of introductory statistics classes from 80 randomly selected institutions for spring 2018 was contacted and asked to respond to a Qualtrics survey (response rate 27.2%). The survey included topics about their course content, instruction decisions and demographic information.

We report results from this survey focusing on course content including the proportion of time content is included in a course. Additionally, we consider how the course content differs over the instructor, audience of the course, and instructional tools employed. For example, 14% of the instructors report covering multiple linear regression; however, of instructors who report having a statistics degree, only 2.8% of them report covering multiple linear regression.

References

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