

Learning About Statistical Inference

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Summary

This chapter reviews research on the learning of statistical inference, focusing in particular on recent research on informal statistical inference. The chapter begins by arguing for the importance of broader access to the power of statistical inference—which, until recently, has been accessible only to those with extensive knowledge of mathematics—and then traces the philosophical roots of inference. We outline the challenges that students have encountered in learning statistical inference and strategies to facilitate its learning that have capitalized on technological advances. We describe the emergence of informal statistical inference and how researchers have framed the idea over the past decade. Rather than consider formal and informal statistical inference dichotomously, we highlight a number of dimensions along which approaches to statistical inference may differ, providing a richer perspective on how formal and informal statistical inference are related. Cases from classroom research aimed at primary, secondary and tertiary levels are used to illustrate how informal statistical inference has shaped new ways to approach the teaching and learning of statistical inference. Finally, we outline gaps in research on statistical inference and present our speculations on its future in light of new research on statistical modelling and big data.

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