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J. Garfield, D. Ben-Zvi

Developing Students' Statistical Reasoning

Connecting Research and Teaching Practice

- ▶ Summarizes an enormous number of research studies and highlights the important statistical concepts for teachers to emphasize, as well as revealing the interrelationships among concepts
- ▶ Makes direct connections between the research results, and practical suggestions for teachers by providing detailed sequences of activities to move from informal to formal reasoning about important statistical concepts
- ▶ Provides a wealth of examples, activities, ideas, and references to useful resources on every aspect of teaching statistics
- ▶ Makes specific suggestions regarding how to plan and use classroom activities, integrate technological tools, and assess students' learning in meaningful ways
- ▶ Incorporates many uses of instructional software and Web tools and resources
- ▶ Offers an accompanying Website with materials to supplement each chapter

Increased attention is being paid to the need for statistically educated citizens: statistics is now included in the K-12 mathematics curriculum, increasing numbers of students are taking courses in high school, and introductory statistics courses are required in college. However, increasing the amount of instruction is not sufficient to prepare statistically literate citizens. A major change is needed in how statistics is taught. To bring about this change, three dimensions of teacher knowledge need to be addressed: their knowledge of statistical content, their pedagogical knowledge, and their statistical-pedagogical knowledge, i.e., their specific knowledge about how to teach statistics. This book is written for mathematics and statistics educators and researchers. It summarizes the research and highlights the important concepts for teachers to emphasize, and shows the interrelationships among concepts. It makes specific suggestions regarding how to build classroom activities, integrate technological tools, and assess students' learning.

This is a unique book. While providing a wealth of examples through lessons and data sets, it is also the best attempt by members of our profession to integrate suggestions from research findings with statistics concepts and pedagogy. The book's message about the importance of listening to research is loud and clear, as is its message about alternative ways of teaching statistics. This book will impact instructors, giving them pause to consider: "Is what I'm doing now really the best thing for my students? What could I do better?"

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