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Solomon, Friedberg; Avner, Ash; Brown, Elizabeth; Hughes Hallet, Deborah; Kasman, Reva; Kenney, Margaret; Mantini, Lisa A.; McCallum, William; Teitelbaum, Jeremy; Zia, Lee
Teaching mathematics in colleges and universities: case studies for today's classroom. Graduate student edition.

CBMS Issues in Mathematics Education 10. Providence, RI: American Mathematical Society (AMS) (ISBN 0-8218-2823-1). 67 p. (2001).

Recent history tells us that, unfortunately, the relations between mathematicians and mathematics educators are, sometimes, uneasy. The two groups of professionals seem strange to each other. I will return to this point later on. It is a great satisfaction to see this book in print. It will be specially useful to graduate students who are TAs or will be college teachers. They face a prospective of teaching mathematics in practically every undergraduate curriculum, from humanities to the scientific and technical areas. In the Introduction, Friedberg says “Just as ‘doing exercises’ is an integral part of learning mathematics, . . . these Case Studies may be regarded as teaching exercises, and can play a similar role in gaining teaching expertise”. The option of this volume was to present fourteen case studies, all “fictionalized accounts of common teaching situations”. These sentences define the idea of the project, which resulted in this book. Surely these teaching exercises are valuable and the project was very carefully conducted. Several mathematicians who are recognized by their achievements in the collegiate level have been consulted and participated in the project. The Case Studies range from questions about students who ask to be transferred from one course to another and students who lack prerequisites, to questions about how to teach the fundamental theorem of calculus and Fourier series, from questions about managing group work to questions about evaluation and grading. Indeed, these are questions which graduate students, TAs and even more mature teachers face in their routine practice. This volume is a good illustration of the different perspectives of mathematicians who teach and of educators with a mathematical formation. Indeed, the former are mathematicians who use the opportunity of having a number of students whose career depends on taking the required courses, to convey the mathematics established in the programs. The latter are educators who see themselves possessing a specific specialty, in the case mathematics, that can be useful in furthering a broad concept of creativity, which are the ideals of students with varied interest, motivation and background. The posture, hence the resulting practices, are not the same. This book is a valuable companion to the former. Conspicuously, the word education does not appear in the important Introduction, which sets the purpose of the project and of the book, while the word teaching is often repeated.

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