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CHAPTER 3

Building Mathematics Curricula with Applications and Modelling

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SUMMARY

My perspective is that of a curriculum developer who has for some time been trying to weave applications and modelling into the mathematics curricula of average students. My remarks would be quite different if I were organising courses wholly devoted to applications and modelling, as many have done. I cannot separate applied mathematics from mathematics itself, either in theory or in practice. To me they are both part of the same magnificent edifice.

At international conferences, I am continually surprised by finding that things I thought were the same everywhere are not, but more often things I thought were different in other countries are nearly the same. Still, my perspective was formed in the United States, and I apologise in advance for any parochial views.

The subject of this paper is the building of mathematics curricula with applications and modelling. My remarks and examples are based on my experiences with students in the United States in Grades 7-12, that is, of ages 12-18. For the most part, the students who have been the targets of my work are sitting in classes which they either are required to attend or feel compelled to take for college entrance or success. Most of these students have not made any selection of particular fields of study beyond the notion that they will or will not go to a college or university after completing secondary school. Nearly two-thirds of those who finish secondary school in the United States go to college, almost half of the total age cohort.