

COMPUTER-BASED MATHEMATICS DISTANCE LEARNING

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Abstract

The rapid development of ICT is a remarkable feature of modern times. Computer power now available at the desktop (or laptop) is comparable or better than that provided by many expensive central facilities just a few years ago. Communication via the Internet has become so common, it hardly seems possible that less than 30 years have passed since there was merely a research project at the USA Department of Defense. Mathematical researchers now routinely prepare and transmit publications electronically, and increasingly with co-authors based at other institutions throughout the world. Distance learning in mathematics has proven more problematic. Textbooks can be made available as portable computer software, or as a “page” at a remote host server – e.g. the university undergraduate textbook *First Steps in Numerical Analysis* by Hosking et al., originally published by Edward Arnold (*2nd Edition* 1996) and subsequently rendered in HTML by J.R.M. Radok (Mahidol University, Thailand). However, it is more difficult to try to emulate the traditional classroom teacher, who so often makes the critical difference in the effective learning of mathematics. Interactive software developed to run on personal computers, to deliver a core first-year university Mathematics course to remote students in outback Australia, was an encouraging early attempt to provide “a computer as the teacher”. This form of delivery is not restricted by physical constraints other than access to a relatively inexpensive computer, and the missing personal tutorial component is now feasible via modern telecommunications.