Scientific publications and technical books on remote laboratories have flourished during the last two decades. However, we have now reached a turning point. This book edited by my friends Abul, Michael, and Judson, provides evidence that remote laboratories have a real added value in education and that spreading outside the early adopter groups is now possible thanks to mature infrastructures and established practices.

In addition to their pioneering work in remote laboratories and their countless efforts to establish links between research, education, and business in this domain (formalized recently in the GOLC initiative), the editors of this book have invited key authors to discuss the challenges and opportunities of providing remote access to laboratory equipment for hands-on learning activities in engineering and science disciplines.

Remote laboratories are more than just advanced educational resources. They are about bridging gaps: gaps between actual engineering or scientific practices and the way they are taught; gaps between developing and developed countries in terms of laboratory resources, maintenance, and assistance; gaps between institutional policy and actual learning needs; gaps between local and global, as well as restricted and open educational paradigms; gaps between simulation and implementation; and finally, gaps between learning modalities such as individual or collaborative work at home, at school, or while commuting. Remote laboratories enable students to have additional, complementary, and richer opportunities to practice their disciplines at any time and from anywhere using a larger variety of well selected, designed, instrumented, and assessed equipment. Remote laboratories are also about strengthening high-level engineering skills and methodologies in ad-hoc or quasi-industrial settings that may not be available on campus.

All these dimensions are integrated in the various sections of the book. Convincing case studies are presented to show the potential of remote laboratories. Best practices are highlighted, taking into account pedagogy issues and learning outcomes as well as architecture, design, and interfacing solutions. Finally, policy issues and cost effectiveness are tackled together with future trends.

The future of remote laboratories is an integral part of the educational portfolio, searchable in the cloud, connected as smart devices in the Internet of Things without intervention of technical people thanks to lightweight interfaces, and exploited in social media platforms, serious games, virtual worlds, and electronic books.

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Denis Gillet received the Diploma in Electrical Engineering from the Swiss Federal Institute of Technology in Lausanne (EPFL) in 1988, and the Ph.D. degree in Information Systems also from the EPFL in 1995. In 1992 he was appointed as Research Fellow at the Information Systems Laboratory of Stanford University in the United States. He is currently Associate Professor (MER) at the EPFL School of Engineering, where he leads the React multi-disciplinary research group. His research interests include Technologies Enhanced Learning (TEL), Human Computer Interaction (HCI), Human Devices Interaction (HDI), and Coordination of Distributed Systems. His current research focus is on personal learning environments and contextual recommender systems, with applications to on-line engineering education and knowledge management. Dr. Gillet is Associate Editor of the IEEE Transactions on Learning Technologies (TLT) and of the International Journal of Technology Enhanced Learning. He is an Executive of the STELLAR European Network of Excellence on Technology Enhanced Learning. He has also a leading position in the ROLE European Integrated Project on Responsive Open Learning Environments.

ENDNOTE

Global Online Laboratory Consortium (http://online-lab.org)