Preface

The field of science education has been developing for over half a century and has flourished especially during the previous few decades. It is timely and fitting now that the *International Handbook of Science Education* should be assembled to synthesise and reconceptualise past research and theorising in science education, provide practical implications for improving science education, and suggest desirable ways to advance the field in the future.

This *Handbook* provides a detailed and up-to-date overview of advanced international scholarship in science education. This two-volume, 72-chapter, 1,200+-page work is the largest and most comprehensive resource ever produced in science education for use by researchers, teacher educators, policy-makers, advisers, teachers and graduate students.

In structuring the *Handbook*, we divided the field of science education into the following ten significant areas:

- Learning
- Teaching
- Educational Technology
- Curriculum
- Learning Environments
- Teacher Education
- Assessment and Evaluation
- Equity
- History and Philosophy of Science
- Research Methods

To each section, we appointed a 'section coordinator', who is a leading international scholar in that particular area and who assisted us in identifying authors and topics for a section and in evaluating drafts of chapters and suggesting improvements.

Each of the *Handbook*'s ten major sections contains a longer lead chapter (approximately 12,000 words) that provides an overview and synthesis of that area, together with 5–8 shorter chapters (around 6,000 words) that provide a narrower focus on research and current thinking on selected key issues in that area. In order to enhance the overall quality of the *Handbook*, most chapters were evaluated by a 'chapter consultant' (in addition to the editors and section coordinators) who also made helpful suggestions for improvement.

In designating the *Handbook* as 'international', we wanted to have a book that would have significance to readers from many countries. Consequently, each
Chapter author was asked to include research from a variety of countries, and also broad geographic coverage was considered when selecting authors. Similarly, chapter consultants were chosen to achieve broad international coverage.

Altogether 173 people (122 authors and 51 chapter consultants) from 25 countries were involved in producing the *Handbook*. While the six countries most frequently represented are the USA (81 people), Australia (23 people), Canada (14 people), the UK (12 people), The Netherlands (6 people) and Israel (6 people), the *Handbook* also involves three people from each of Germany, Italy, New Zealand, Taiwan and Nigeria and two people from each of South Africa and Spain. Other countries represented by one chapter author or chapter consultant are Singapore, Korea, Macau, the Philippines, Greece, France, Colombia, Belize, the West Indies, Costa Rica, Norway and Denmark.

Although the *Handbook*’s authors and consultants span many parts of the world, their distribution among countries also reflects the fact that most published research in science education is written in English and involves researchers from Anglo-Saxon countries (especially the USA).

Because of the current rapid changes within the field of science education, the half-life of a handbook such as the present one will be limited. Therefore, before long, it will be desirable to consider a second edition of the *International Handbook of Science Education* which will allow major updating of selected chapters and the commissioning of completely new chapters in most cases.

A work this large leaves us indebted and grateful for the help and support of many people over quite a few years. Peter de Liefe, Kluwer’s Humanities and Social Sciences Publishing Editor at the time, first discussed this project with us during the annual meeting of the American Educational Research Association in Atlanta in 1993. Irene van den Reydt, Kluwer’s Assistant to the Humanities and Social Sciences Publishing Editor, has remained helpful and pleasant throughout our frequent e-mail conversations during what sometimes seemed like an endless task.

We especially thank our 122 chapter authors and 51 chapter consultants for being part of this enormous publishing enterprise. Authors willingly modified their chapters based on our suggestions, evolved their chapters through various versions, and were patient with us when we were unable to keep all the balls in the air at once.

At Florida State University, Ken Tobin’s editorial role was greatly assisted by Aldrin Sweeney (now at the University of Central Florida) and Rowhea Elmesky, a doctoral student in science education. Additional invaluable help with the indexing was provided by Barbara Tobin, Gena Merliss, Susan Wellhofer and Brian Gauvin from the University of Pennsylvania.

We both are especially indebted to Trudy Tanner at Curtin University of Technology for her enormous contribution to the *Handbook* in many ways over the years. She organised the initial invitation letters to authors, assisted Barry Fraser with the editing, management and wordprocessing associated with several versions of chapters in five *Handbook* sections, and much more. In particular, she checked the penultimate version of each of the 72 chapters, including the thousands
of references, converted chapters to Kluwer style, and corresponded with authors about inconsistencies and omissions in references. Without her dedication, thoroughness and sheer hard work, the Handbook would not be of such high editorial quality and would not have been finished at the time when it was.

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