

Trends in Science Education Research

David Treagust

Curtin University of Technology, Perth, Australia

This presentation will examine some of the unprecedented developments in science education research in the past three decades (1974-2004).

In the last 30 years, there has been a huge increase in international professional research activities (as is illustrated by this conference), resulting in an increased output of publications in science education research from a wider range of nations (as is illustrated by the

number of new journals, especially in the English language), and an increased amount of professional development initiatives (as is illustrated by increasing interactions of professional societies, employers and universities and the growing importance of the roles of science teachers' associations in many countries).

At the classroom level throughout the past 30 years, there has been a constant call for more relevant sci-

ence education (as is illustrated by a growing interest in post-compulsory schooling and how to provide appropriate curricula and assessment in science education) and for greater inclusivity in science education (as is illustrated by the need for science curricula that do not simply reflect social and cultural stereotypes of science).

During this period, there has developed a great diversity of the types of research being conducted in science education. At one end of this spectrum are large-scale assessment programs (as is illustrated by the Trends in Mathematics and Science Studies (TIMSS) and the Program for International Student Assessment (PISA) studies which provide both national data and international comparisons). At the other end of this spectrum are small-scale studies of the work of science teachers in individual classrooms (as is illustrated by action re-

search studies and the detailed documentation of expert practices). To be able to conduct studies of this range, over the past three decades, there has been an increasing acceptance of alternative genres of science education research and an acknowledgment of their own strengths and weaknesses.

This presentation will expand upon the issues described above with examples from different countries. However, from my perspective, despite all the developments in science education curricula, assessment and research, there is still need for a greater understanding of the relationships between policy and practice and a realistic expectation of what science education research can contribute to practice. This certainly should be a major part of the work of science educators in the next three decades.