

Book Reviews

DEFINING AN IDENTITY – THE EVOLUTION OF SCIENCE EDUCATION AS A FIELD OF RESEARCH.

By Peter F. Fensham

2004

Kluwer Academic, Netherlands

xi+ 264 pp.

ISBN 978-1402014673 (hard cover)



Science education research has developed significantly over the past four decades. This domain has steadily grown – the number of science education researchers has increased, for instance, rather nicely. The membership of the National Association for Research in Science Teaching (NARST), for instance, increased from some 600 in the early 1990s to more than 1800 today. It seems that this by now mature discipline feels the need to look back into its own history – surely in order to gain orientation for further successful work.

An early attempt of such a historical analysis was carried out by DeBoer (1991). More recently, a number of books appeared. There are basically two different approaches of historical analyses. The “classical” approach includes a scholarly review from the personal view of the authors (DeBoer, 1991; Atkin & Black, 2003). The “history in person” approach (Tobin & Roth, 2007; Liu, 2007) illustrates the historical development by discussing the development of individual researcher. Tobin and Roth (2007), for instance, invited a couple of colleagues to write personal views on their own development and commented these “stories”. Liu (2007) asked students in a seminar to outline the work of a set of “noted” science educators.

In the book under review here Peter Fensham (2004) draws on personal interviews with 79 science education researchers from many countries “all over the world”. He uses this data set to reconstruct the evolution of science education as a field of research in order to provide orientation for future developments.

I would like to point out that I am personally involved in this book. When I was driving on a busy road between Santiago de Chile and La Serena just behind a huge stinking truck Peter, who was sitting in the other front seat, asked me: Tell me about two of your publications in the field that you regard as significant. I did not understand that question properly but told him about publications by other colleagues that had been significant for me. That was the birth of the second question Peter later used in his interviews. I also carried out a couple of interviews and was interviewed by Peter. Hence, also my voice is in the book reviewed here.

In the interview the following two questions were asked:

- ✓ Tell me about two of your publications in the field that you regard as significant.
- ✓ Tell me about up to three publications by others that have had a major influence on your research work in the field.

These two questions provided the frame for a somewhat “open-ended” interview. The 79 colleagues interviewed stemmed from sixteen countries – mainly from North American, Europe, and Australia. It is a “convenience” sample – however including “noted” science educators from various parts of the world.

A formal analysis of the interviews in terms of qualitative content analysis or grounded theory framework may not be expected from this book – and this actually is the very advantage of the work. Peter Fensham uses the interviews in two ways. First, as an additional source to supplement his deep insight into the state and the development of science education as a research domain. Second, the views of the interviewed colleagues are used to illustrate the points Peter makes.

The first chapter “*Science Education: What defines a field of research?*” provides the following criteria for the subsequent analyses:

Structural Criteria: (S1) Academic recognition; (S2) Research journals; (S 3) Professional associations; (S4) Research conferences; (S5) Research centres; (S6) Research training.

Intra-Research Criteria: (R 1) Scientific knowledge; (R 2) Asking questions; (R 3) Conceptual and theoretical development; (R 4) Research methodologies; (R 5) Progression; (R 6) Model publications; (R 7) Seminal publications.

Outcome Criteria: (O 1) Implications for practice.

Here are the themes of the subsequent chapters:

- ✓ Origins
- ✓ The Researcher as Person
- ✓ Major Influence on Research
- ✓ Asking Questions
- ✓ The Role of Theory
- ✓ Methodology
- ✓ Evidence of Progression
- ✓ Focus on Content
- ✓ Research to Practice
- ✓ Gender and Science Education
- ✓ Politics and Science Education
- ✓ Science Education, Technology and IT
- ✓ Conclusions: Language and Science Education

The reader may expect a deep insight into the state and development of science education as a research domain from studying these chapters. Peter Fensham makes the reader familiar with key publications, major researchers working in the various fields as well as with significant theoretical views, ideas, findings, and implications for instructional practice. These chapters are rather skilfully designed and illustrated with examples from the interviews. However, they do not allow “easy reading”. Full attention is needed to follow the many fine details and thoughts provided.

It seems to be quite characteristic for the intention of the book that the concluding chapter has the title “Conclusion: Language and Science Education”. This chapter, namely, does not include a conclusion of the arguments presented in the previous chapters but provides insight into an additional more recent research field. Throughout the book conclusions do not come in the dress of summaries condensing issues discussed into few bold statements. Further, there is no paragraph on discussing consequences explicitly for the further development of science education. Peter Fensham provides a wealth of information on the state and origin of major ideas in science education research. Of course, also Peter’s own views become apparent. But he does not superimpose his views on the reader. It appears that he intends to provide the reader with the best food of thought for the further development of science education available. But he seems to leave drawing conclusions for future development to the reader.

It is for this reason that I refrain from summarizing the message of the book in a few sentences. The only message I have for the readership of this journal is to read this book. If there is a set of books in science education that must be read – Peter Fensham’s book discussed here is one of them.

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