



BOOK REVIEW

Understanding Teacher Expertise in Primary Science: A sociocultural approach

Anna Traianou

Sense Publishers (2007). pp. xii+166. Pbk. £19.99

Susan Hogg, susan.hogg@satrosphere.ac.uk

Satrosphere Science Centre, Aberdeen, Scotland

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The theme of Anna Traianou's book is that science subject knowledge plays an important role in the classroom practice of primary school teachers. In recent years, constructivist theories of learning and teaching have been influential in primary science education. Traianou examines two constructivist theories about expertise in primary science and then goes on to look at a different approach based on sociocultural theories of learning and teaching.

The first part of the book looks at reforms in education over the past 40 years and the increasing emphasis placed firstly on subject knowledge as a requirement for primary science expertise, followed by a similar requirement for pedagogical content knowledge. Traianou examines the approaches of 'small range' constructivists and 'big ideas' constructivists to both subject knowledge and pedagogical content knowledge and concludes that both approaches underestimate the complexity of classroom practice. She goes on to compare these with a sociocultural approach to learning and teaching where she suggests that teachers' subject and pedagogical knowledge is integrated and situated and develops as teachers take part in activities in their science classrooms, to achieve specific goals.

In the second part of the book, Traianou uses a sociocultural approach for studying primary science

teaching expertise. She outlines some of the methodological implications for this type of approach before presenting a case study of a primary science teacher who is considered an expert practitioner. The key findings of the case study are the eclectic and practical character of the practitioner's approach. Her expertise is constantly evolving and encompasses several of the initiatives currently being used in Scottish primary schools such as *Assessment is for Learning* and *Critical Thinking Skills*.

The case study is certainly very interesting and, as Traianou herself suggests, further research needs to be done in this area looking at examples of expertise-in-action and the implications for both the professional development of teachers and initial teacher education. The flexible and resourceful approach to primary science learning and teaching which is outlined in this research matches well with the aspirations of *A Curriculum for Excellence*. Teachers are encouraged to be innovative, flexible, creative and enthusiastic and the research suggests that approaching primary science teaching from a sociocultural perspective could be one way to develop this.

This book is likely to be of interest to teachers as practitioners and action researchers as well as educational researchers seeking to adopt a case study approach to explore science teaching.
