



Review

The possibility and importance of postperspectival working



Tim Jay*

Graduate School of Education, University of Bristol, 35 Berkeley Square, Bristol BS8 1JA, United Kingdom

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ABSTRACT

This article addresses the issue of the plurality of theories and perspectives in education research, and introduces postperspectival theory as a means to work with this plurality. Three pieces of research are discussed, all focusing on children's learning of numbers, one taking a cognitivist perspective, the other two a more sociocultural perspective. Drawing on poststructuralist theory, the article addresses questions of how we make sense of research from multiple perspectives – in particular, how researchers might respond to apparent contradictions that arise when working across perspectives. A proposal for a means of working towards a synthesis of theory, using the example of children's learning of number, is proposed. An argument is made that a postperspectival approach is first of all possible, and secondly an important tool in the construction in the development and application of educational theory.

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* Tel.: +44 (0) 117 33 14225.

E-mail address: tim.jay@bristol.ac.uk

1. Introduction

“As long as you still experience the stars as something above you, you still lack a viewpoint of knowledge” Nietzsche (Beyond Good and Evil, 1886)

Education is a research domain in which one encounters a plurality of perspectives and methods. This article introduces postperspectival working – a means of working with this plurality. The background to this method of working is poststructuralist theory and I will discuss the work of Wittgenstein, Derrida, Lacan and Bakhtin as sources for such theory. I then suggest that one method of postperspectival working is to engage in analysis of theoretical perspectives as Lacanian subjects. After an introduction to this method, I will present an example of its use through a treatment of two contrasting examples of research on children’s early learning of numbers – one taking a cognitivist perspective, the other taking a sociocultural perspective. I argue that postperspectival method offers a novel approach to questions of education research and provides a means for engaging with theory in a radically novel way.

Section 2 will present an account of some of the issues and questions relating to plurality in mathematics education research. In line with much of the writing on this issue, there will be a particular focus on cognitivist and socioculturalist perspectives as an example of a debate that have polarised sections of our field. There will also be consideration of recent positions on plurality. Section 3 will present a case for taking a poststructuralist approach to the issue of plurality and will provide a background on the sources of theory to be drawn upon later in the article. This section will have a particular focus on Lacan’s Symbolic, Imaginary and Real, and the formation of the subject during the Mirror Stage. Section 4 will describe examples of research that focus on children’s learning of number. One of these (Halberda & Feigenson, 2008) takes a cognitivist perspective while another two (Bloom & Wynn, 1997; Dunphy, 2006) take a socioculturalist perspective. In Section 5, I engage in a treatment of each perspective, drawing on the respective research articles as sources. In Section 6 I evaluate this ‘proof of concept’ exercise and consider the potential of postperspectival working for engaging with theory in mathematics education research.

2. The plurality problem

Learning is an interdisciplinary research domain. Researchers calling themselves Psychologists, Computer Scientists, Philosophers, Educationalists and Sociologists all claim to be engaged with the study of human learning. There appears also to be institutional support for interdisciplinarity in research on learning, with universities, research councils and editorial boards all advocating interdisciplinary working. However there appears little agreement, even where the question is asked, about what interdisciplinary research in learning is, and what it adds to our understanding of learning beyond more common, more accessible, multidisciplinary approaches.¹ Given the barriers to interdisciplinarity, it seems that if interdisciplinary research is to be worth doing, then we need to understand how we achieve more by working in an interdisciplinary way than we would achieve by summing the activity of research conducted separately within established disciplines.

The problem of interdisciplinarity is not limited to mathematics education, or even to the social sciences, as we can see here:

Working at the cusp of two fields, as both a visual art and dance critic, I am made pretty aware on a daily basis of how rare, if not seemingly impossible, true ‘interdisciplinarity’ between different art fields is actually fostered. Interdisciplinarity is often championed or marketed with a watery feel-good kum bah yah spirit by different venues or organizations, eliding the serious impediments to actually fostering real interdisciplinarity between art fields. If we define “interdisciplinarity” as merely the edges of fields touching, such as a choreographer using a visual artist to do scenery, or different disciplines being placed side by side one another in a “salad bowl” mix, such as a multi-disciplinary performance space, then perhaps “interdisciplinarity” is not rare. However, if we define “interdisciplinarity” as the historical trajectory and the canons of different art fields interpenetrating and cross pollinating, sharing affinities in their conceptual or aesthetic predilections, if not their notions of form, intermixing the texture of their social communities, then interdisciplinarity it seems to me is rare. (Liu, 2009)

This quotation is included as it has such striking parallels with research in learning. Researchers investigating learning are divided into different departments, different journals, different conferences and so on. There are few visible examples of research in learning that cannot be identified as coming from a particular discipline, or even a particular perspective within that discipline.

The issue of plurality, of methods and theory, in mathematics education is compounded by the range of theoretical perspectives in use that draw upon one or more disciplinary traditions. My introduction to some of the theoretical problems faced by mathematics learning researchers was through the articles of Anderson, Reder, and Simon (1996, 1997) and Greeno (1997). Anderson et al. (1996) sets out a set of four purported claims of situated learning researchers; that “action is

¹ Following, for example, Gibbons, Limoges, Nowotny, Schwartzman, and Scott (1994) and Lattuca (2003), we define multidisciplinary work as that where researchers from different disciplines work independently on aspects of a project but stay within their disciplinary boundaries, and interdisciplinary work as that where there is some level of integration of disciplines.

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