Researching style: Epistemology, paradigm shifts and research interest groups

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ABSTRACT

This paper identifies the need for a deliberate approach to theory building in the context of researching cognitive and learning style differences in human performance. A case for paradigm shift and a focus upon research epistemology is presented, building upon a recent critique of style research. A proposal for creating paradigm shift is made, utilising theories of distributed cognition and the frameworking of a model for pragmatic research methodology. The proposition entails setting up a series of Research Interest Groups (RIGs) to operate within and beyond the European Learning Styles Information Network (ELSIN). The approach is aimed at realising further integration and application of theories of knowledge management, educational and organisational psychology in a pragmatic research methodology for use in style research.

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1. Introduction

The main purpose of this article is to address a continuing lack of coherent theory in the field of style research and argue for the need for paradigm shift (Rayner, 2007a,b). A deliberate approach to organising paradigm shift is explored, utilising a blended model of theory building, and models of situated learning and distributed cognition (MacGillivaray, 2010; Paavola, Lipponen, & Hakkarainen, 2004; Spillane, Halverson, & Diamond, 2001). This, in turn, leads to a specific proposition for the setting up of several Research Interest Groups (RIGs), operating within and beyond the European Learning Styles Information Network (ELSIN), a community of researchers interested in style differences in human performance. The approach as described is very much about enabling a means to an end – the strengthening of style theory grounded in applied research – through collaborative and participatory processes aimed at growing new models of pragmatic research methodology.

The starting point for my own participation in the field of cognitive style and learning styles has always been as a teacher with an interest in individual differences and learning. The domains of differential, cognitive, and humanistic psychology have provided referential knowledge with which to explore this interest over a period of thirty years or more, firstly as a researching teacher, and then as an academic researcher. This journey, however, has coincided with a difficult period during which the intuitive appeal of cognitive style and learning styles in schools and workplace learning has intensified but the academic status of differential psychology, and more particularly research into individual differences in the domains of

psychology and education, has diminished. The field of style research during this same period, furthermore, has expanded exponentially yet at the same time been repeatedly criticised for:

- persistent lack of research rigour, applicability, and relevance in working with contexts of practice (Coffield, Moseley, Hall, & Ecclestone, 2004a,b);
- the tendency to proliferate contested and conflicting forms of knowledge (Messick, 1994; Neisser et al., 1996; Reynolds, 1997);
- weak theory in explaining the phenomena of cognitive style and learning styles (Furnham, 2001; Sternberg, 1997).

As Messick (1994, p. 133) concluded over fifteen years ago, there is still perhaps today in the style field an urgent need for '... new perspectives and research paradigms', informed by psychological theory (in terms of personality, ability, and information processing). This is still required for advancing our understanding of cognitive style and learning styles.

2. Research, theory, and practice: where is the substance in style?

It was Messick (1984, 1994, 1996), and Grigorenko and Sternberg (1995), contemporary psychologists in leading style research, who pointed out how workers in the applied domains were responsible for a huge surge in the volume of research into style. More recently, McInerney (2005) has claimed that research into cognitive style forms the most prominent area of research in educational psychology. With this in mind, it is helpful to consider how a continuing concern for theory and practice is a predominant issue for researchers in the context of any applied discipline (Petit & Huault, 2008), and therefore, is clearly crucial for many researchers in the style field. Relevance, utility, and impact are what practitioners seek from theory and expect

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as the contribution of applied research. There is also, however, a less visible theoretical dimension to ensuring that meaningful research, and creating new knowledge positively impacts upon the actual world of practice. Sternberg (2008), for example, has recently argued that in educational psychology, there is a pressing necessity to re-connect the theory of psychology to the actual world of education. He suggests two fundamental approaches to the application of psychology in education: the first is *domain-general*; and the second *domain-specific*. Sternberg (2008, p. 150) insists that "one of the greatest challenges facing modern research in learning and instruction is devising and then empirically testing domain-general theories."

In moving forward to meet this challenge, Sternberg stresses the role of domain-general thinking, its anticipated place and particularly, its contribution in generating a unified model of learning and instruction. In Sternberg's thinking, the domain-general approach is concerned with a theory of cognition and related skills applicable to any subject area or context. The second type of specific theory seeks to apply knowledge and practice-based evidence contextualised in particular subject knowledge domains or activity, such as language acquisition or arithmetic. The latter is identified as the dominant model in contemporary research. It is, however, also perceived as contributing to a fragmentary and fractured model of learning and instruction.

The need of professional practitioners to re-visit and further clarify the nature of a theory–practice relationship in knowledge is not new. It is after all, as previously stated, common fare for the work of researchers in an applied discipline. Indeed, the mix of philosophical, sociological, and psychological theories adopted in the areas of professional learning and knowledge creation continue to challenge the work of applied researchers. There is, for example, a continuing effort to develop models of fit-for-purpose research methodology (see Johnson & Duberley, 2000; Torrence, 2004), as well as examples of distinct forms of epistemology or pedagogic models for professional learning (Scott, Brown, Lunt, & Thorne, 2004; Starkey & Madan, 2001; Usher & Bryant, 1989; Young, 2007).

What is argued here, however, is that this effort needs to more deliberately target and integrate forms of theoretical and practical knowledge rather than neglect or reject a building of theory (Hammersley, 2004; Thomas, 2007). This kind of action is not dissimilar to Zimmerman's more recent account of developments in the field of self-regulated learning (SRL). He explains that

"An early defining moment in research on self-regulation was a symposium at the American Educational Research Association annual meeting …. It sought to integrate under a single rubric research on such processes as learning strategies, metacognitive monitoring, self-concept perceptions, volitional strategies, and self-control …. An outcome of the 1986 symposium was an inclusive definition of SRL as the degree to which students are metacognitively, motivationally, and behaviourally active participants in their own learning…." (Zimmerman, 2008, p. 167)

There are other examples of similar movements in the wider area of differential psychology (see Byrne, 1996; Collis & Messick, 2001; Neisser et al., 1996). The point here is that a theory-building effort, linked to research methodology and the construction of domain epistemology, is crucial to knowledge generation within any domain. In the world of researching style differences, there is an urgent need for more integrative effort, thereby enabling a coherent theory and perhaps with this approach ideally emphasising the idea of 'substance in style'.

2.1. The style research paradigm: models, measures, and meaning?

The research paradigm in the style field is historically dominated by a logical positivism associated with experimental psychology. The traditional practice in style research involves a theory of cognitive and/or learning styles grounded in an individual model, its measure and an account of generated data using the same model. The history of style research, furthermore, has seen a recurring production of theoretical tautology, reflecting a symbiotic relationship between model and measure. To work with cognitive style is generally to use Riding's (1991), or Witkin's (1962), or Gregorc's (1982) model or some other separate and distinctive model. It is not to work with a single meta-theory of cognitive style. This tautology of method is nurtured and replicated in a traditional episodic research process, leading to a continuing production of new psychometric measures, usually in the form of a self-report 'test'. In more rigorous examples of style research, the trend has also been for work aimed at an evidence-informed elaboration of factors or variables associated with one or at the most two particular models. This kind of research is clearly not linked to more general theory, and by way of example, any implications of its meaning for the following key constructs: firstly, cognitive style (defined as an individual's preferred and habitual approach to organising and representing information, involving and influencing for example, typical modes of functioning in decision making, problem solving, and thinking); and secondly, learning style (defined as an individual's preferred approach to learning activity, represented in the construct of a stable repertoire of learning strategies, reflecting an individual's psychological functioning).

It is, moreover, this pattern of individualised experimental research that led to Coffield et al. (2004a) roundly criticising the research paradigm for incoherent theory and a questionable lack of integrity, reinforced by examples of messianic, self-interested and largely unverifiable research. Their report insisted that the nature of the research had led in turn to serious limitations in the contemporary theory of style. The publication of this report for the Learning and Skills Council in the UK was followed by considerable publicity and resulted in a wave of educational publications rejecting the idea of learning styles. Rayner (2007a), at this same time, identified the following key themes for style researchers in the report for researchers and practitioners to consider:

- no consensual or coherent style theory;
- persistent psychometric flaws in models and measures of cognitive and learning styles;
- alleged incestuous research practiced in a field engaged in self-affirming replication;
- commercial conflicts of interest undermining reliability and integrity of empirical research;
- individual researchers promoting their own theory and in some extreme cases this is described as a messianic drive for field domination;
- no clearly established evidence in reported research of positive effects related to the application and practice of learning styles;
- a general disregard of the 'gold standard statistic' of effect size used in evidence-informed methodology;
- theories and explanations of the learning process in social psychology and sociology that offer a better prospect of return for resource investment in the educational setting.

The critique and evaluation presented by Coffield, Moseley, Hall, and Ecclestone (2004a,b) is not exclusive or in itself without its limitations. It is arguably flawed in its methodology. It begins by meticulously adopting an evidence-based theory for review articulated by the Evidence for Policy and Practice Information Centre at the University of London. It then abandons this framework and adopts a different approach, borrowing from Curry's (1987) earlier review of learning styles to create a revised learning styles taxonomy. Much of the critical frameworking for this taxonomy is not clearly attributed, deals in secondary sources, reflects a shaky basis for an interpretation of psychometric judgements, and largely emulates the structure but