Dyslexia and learning style – a note of caution

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In a recent issue of BJSE, Sioned Exley published the outcomes of her school-based research into effective teaching strategies for students with dyslexia ‘based on their preferred learning styles’. She reported improvements in performance and attainment in spelling and recommended a more wide-scale adoption of approaches focused on learning styles.

In this article, Tilly Mortimore, author of a recent book on dyslexia and learning style, and lecturer in inclusion at the University of Southampton, argues for caution. She suggests that practitioners need to look more closely into recent research into learning style and dyslexia before committing themselves to dramatic shifts in their ways of working. She presents here a review of the research context for learning styles and some reflections on Exley’s selection of a research focus. While welcoming practitioner research, Tilly Mortimore suggests ways in which the theoretical, methodological and practical aspects of small-scale enquiries could be strengthened in order to increase their impact upon policy and practice.

Key words: dyslexia, learning, style, research, practitioners.

Introduction
Like letters dispatched from a battlefield, action research undertaken in the workplace by practitioners should command respect, both for the authenticity and relevance of the practice and for the often demanding conditions under which it is undertaken. Practitioners are also frequently in the position to inform policy on a local scale and, through publication and discussion in journals, within a wider context. This requires them to ensure that their knowledge, methodology and reflection on the results meet criteria every bit as rigorous as those faced by researchers within an academic context before they can start to make recommendations based on a reflexive approach to their findings.

Exley’s (2003) study is both interesting and informative and certainly meets Stenhouse’s (1985) criterion of producing an ordered report of experience which invites judgement. It also builds bridges between research and practice. However, teachers encouraged to follow the learning styles route, and make changes in practice on the basis of this small-scale study, should exercise some caution. A number of questions still remain unanswered.

Before using Exley’s (2003) findings to make policy recommendations, it would be advisable to take a closer look at the following areas: the learning style research context; her selection of research focus; and the effect of a type of methodology so often utilised in practitioner research upon her conclusions.

The learning style research context
Examination of the existing research into learning style and dyslexia reveals a complex picture. There is much theoretical and practical research into the constructs underlying learning style theory and its application, going back over 80 years and covering a wide range of contexts, both educational and within the workplace. Riding and Rayner (1998), Babbage, Byers and Redding (1999), Mortimore (2003a) and Cassidy (2003) all provide reviews and useful suggestions for educational applications.

The field, however, is dogged with controversy over the appropriateness and number of the constructs used to describe learning style; the reliability of methods of diagnosis; and even over the usefulness of matching style to teaching approach, sometimes termed the ‘matching hypothesis’ (Riding & Rayner, 1998). Although my work in educational environments has led me to encourage the judicious application of learning style theory to practical teaching, my research has uncovered a number of reasons for exercising caution.

A recent review by Coffield, Moseley, Ecclestone and Hall (2004) revealed that learning style theorists have devised more than 70 constructs (or models), of learning style and ways of identifying them. Some models are related to areas of the brain; others are rooted in theories of personality or motivation. Some are developmental and follow Piaget in suggesting that style evolves from stage to stage throughout a learner’s lifetime to achieve maturity. Each model is accompanied by its own assessment methodology and, frequently, with suggestions as to ways of implementing subsequent programmes. Currently, style can be assessed using questionnaires, interviews, observational behaviour, the creation of profiles or combinations of all four (see Babbage et al., 1999; Mortimore, 2003a). There are also a number of computer-administered instruments which measure cognitive behavioural, for example, Riding’s (1991) Cognitive Styles Analysis, or analyse responses to questionnaires, for example, Zdzienki’s (1997) StudyScan. Coffield et al.’s (2004) review stated that only one of all the assessment tools they investigated met adequate psychometric criteria for internal consistency, reliability and validity.
This plethora of models has given rise to at least five unresolved controversies related to learning style, centred upon the relationship between the environment and the individual (Mortimore, 2003a), and reservations are expressed by researchers such as Chinn and Ashcroft (1998) as to how far style may be situation-specific rather than an established trait. Coffield et al. (2004) are strongly critical of all but a couple of learning style assessment measures. They go so far as to suggest that to label a student with a particular learning style based upon what they would consider to be an unreliable measure can restrict rather than liberate a learner – and that emphasis upon learning style rather than other social and contextual factors in teaching and learning is, in itself, misplaced (Coffield et al., 2003). They would suggest that the restructuring of pedagogy and institutions to reflect a learning style approach maintains the power of the teacher at the expense of the empowerment of the student. Any researcher utilising cognitive or learning style theory needs to place the study firmly within the context of these unresolved controversies.

Selection of research focus

Laying aside such controversy, learning style research is complex and the term ‘learning style’ is applied to a myriad of constructs, from those rooted firmly in personality theory to approaches to learning and levels of processing (see Riding & Rayner, 1998, for a review). Exley (2003) has selected ‘the narrower aspects of learning style preference, such as visual, auditory and kinaesthetic tendencies’ as the focus for her study, but without providing a clear rationale for this particular focus.

The selection of what is, in essence, a verbal-visual-kinaesthetic construct could provide an opportunity to examine the claim, which seems to have become a ‘given’ within some dyslexia literature (see West, 1997), that there is some relationship between visuo-spatial strategies or strengths and dyslexia. This hypothetical relationship currently remains anecdotal, with no published empirical research to support it (Mortimore, 2003a). Exley states that five of her seven students preferred a visual learning style and suggests that this may be significant. A small-scale study (Mortimore, 1998) containing 15 students with dyslexia and 15 without, used the Cognitive Styles Analysis (Riding, 1991) to examine the extent to which those with dyslexia favour visual processing approaches over the verbal. This study did suggest some relationship between visual style labels and dyslexia but these findings were not replicated in a further study (Mortimore, 2003b) of 117 students. This study revealed no link between visuo-spatial learning styles and dyslexia, nor did it reveal that students with dyslexia, regardless of learning style, performed more successfully when encouraged to use visual reinforcements.

Another justification for Exley’s (2003) focus upon visual versus verbal or kinaesthetic learning might be the opportunity to explore the evidence for a preference for right-hemisphere visuo-spatial processing, suggested in the research (Galaburda, 1993) that she cites. However, the hemispheric specialisation hypothesis has been strongly criticised (see Coren, 1993 and, for a review, Mortimore, 2003a). Goswami (2004) points out that the 2002 OECD report on understanding the brain not only coined the term ‘neuromyth’ to describe the way in which scientific research can be misrepresented when translated into lay terms, but also celebrated hemispheric specialisation theory as a leading neuromyth. Goswami (2004) emphasises that the evidence from neuro-imaging technology suggests that the two hemispheres work together in every cognitive process so far examined, including language and face recognition, giving no neuro-scientific credence to theories of left or right-brained learning. Currently there is little evidence to support claims that learners with dyslexia favour visuo-spatial or ‘right-brained’ approaches to learning.

One practical reason for the selection of the verbal-visual-kinaesthetic focus might be to enable the teacher-researcher to try out alternative spelling methodologies, following Brooks and Weeks’s research (1999). This is an interesting approach. However, Exley’s (2003) spelling task, as is the case with many methods, is itself open to ambiguity both in terms of exactly what type of processing (visual, verbal or semantic) the students might be using during the task and of how the results might be interpreted.

Methodology

Practitioner researchers are frequently forced to rely upon small ‘opportunity’ samples and this inevitably raises questions as to the possibility of achieving quantitative rigour within what are likely to be essentially small-scale, descriptive studies. Exley’s work has produced some interesting results and has evidently been of real help to her students. The close attention she has paid to these students’ strengths and weaknesses and the way in which this provides them with the language in which to examine their own approaches to learning is likely to have equipped these learners with new practical and metacognitive skills and the confidence to apply them in other learning contexts. Exley (2003) reports that their self-esteem has been enhanced and that, for the students with behavioural difficulties, this has been a positive learning experience upon which to build. These are outcomes all practitioners would welcome.

Difficulties are likely to arise, however, in a number of aspects related to the interpretation and application of the results of small-scale studies like Exley’s. These include attempts to extrapolate from the findings to other groups of learners; to attribute results to particular factors; and to avoid criticism, in intervention studies, over choice of instruments to set parameters and measure changes. There are, however, a number of strategies that can help to counter criticism and lend weight to the findings.

In situations where the small number of participants and absence of a control group makes it hard to apply any kind of statistical analysis and therefore renders the studies open to criticism, researchers could incorporate a range of strategies which would strengthen their cases. This could include attempting to run a parallel group, who are offered similar amounts of extra time and attention but an
alternative intervention, or placing qualitative data, gathered from a range of sources during the study, alongside any quantitative analyses, enabling further triangulation and enrichment of the findings.

In situations where an attempt is made to use case-study narrative to attribute changes in the participants’ performance to a particular factor, such as the application of learning style theory to practical classroom activities, extra rigour is required. The learning style research described earlier indicates the problematic nature of learning style assessment instruments. Although self-report questionnaires and observational analysis are valuable as tools to enable students and teachers to develop awareness of their approaches to learning, it is debatable whether they provide a sufficiently rigorous way of setting the parameters if a more quantitative outcome is also required and reliable attributions to the intervention are to be made. Any changes found could be attributable to a range of factors, such as motivation, self-esteem and teacher attention, and it is important to control for as many confounding elements as possible.

In small-scale studies which involve an intervention from which conclusions will be drawn, it is essential to undertake a meticulous analysis of the nature of the intervention task and to use a range of multiple and, ideally, standardised methods to establish baselines and to measure progress in the targeted skill.

Small-scale studies carried out by practitioners open a fascinating window into the real-life experience of working in education. However, the practical restrictions placed upon researchers by their working environment can undermine the significance of the results and therefore make it essential that close attention is paid to such elements of the study as establishing control groups; amassing the broadest possible range of data; analysing any intervention tasks; selecting multiple assessment and progress measures; and thoroughly discussing controversies that might arise from the research base at the outset of the study. If attention is paid to these elements, any case for using the results of such studies to influence policy will be considerably strengthened.

**Conclusion**

Exley’s (2003) study has provided some insights of real use to educators. However, it could be argued that further investigation is warranted before general alterations are made to teaching approaches based upon her project’s findings as to the effectiveness of the application of a learning style approach. There is currently little agreement in the world of learning style research as to the validity of the constructs or the outcomes of matching style and teaching methods. There is, however, evidence of some consensus as to the value of giving learners the awareness, respectful attention and language to recognise their own best strategies and the learners in Exley’s study have gained much that was positive from this experience. Research to date may not have the power to offer unqualified support to the implementation of learning style approaches for learners with dyslexia, but it should stimulate further investigation and provide encouragement to those tempted to engage in practitioner research on the topic.

**References**


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