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Exploring Style: Enhancing the Capacity to Learn?

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Abstract

Purpose – To introduce a selection of papers from the 12th Annual European Learning Styles Information Network Conference on the place of cognitive style in enhancing the capacity to learn.

Design/methodology/approach – The paper identifies developments in the field of cognitive and learning styles, considering applications of such work through small-scale practitioner-led research projects in teacher education and other workplace learning.

Findings – These papers discussed articulate various ways through the cognitive/learning style terminology conundrum to help facilitate advancements in educational practice in a meaningful and informed way. A number of questions are raised regarding the place of cognitive/learning styles in relation to: a broader agenda of learning to learn, state versus trait aspects of styles, along with selected dimensions of powerful learning environments. The papers argue that by using a metacognitive approach and the explicit study of ‘how we learn’, individuals are better placed to plan, deliver and develop their own learning and teaching, and subsequently the learning of others.

Originality/value – The paper considers recent developments in the styles field, focusing on the theory practice interface and possible ways of advancing our understanding and application of styles in different educational training environments.

Keywords Education and training; Cognitive and Learning styles.

Paper type Research paper.

Context

The potential impact of learning and cognitive styles research on learning in education and the workplace continues to be a fiercely debated one (Davidson, 1990; Lawrence, 1997; Hall, Moseley, Ecclestone & Coffield, 2004). Whilst there may be increasing attention to government driven personalisation agenda within mainstream education

in the UK as part of their pursuit for lifelong learning, pragmatic on-going issues continue to be raised in relation to how an understanding of cognitive and learning styles can be applied in a meaningful and effective way in both school and workplace settings (Coffield et al., 2004). Fundamental questions also remain regarding the relative merits of various cognitive/learning styles measures, along with issues to do with the relative impact of cognitive and learning styles on learning when compared to a myriad of factors affecting the learner both directly and indirectly in the creation of favourable learning environments.

The selection of papers presented here from the 12th Annual European Learning Styles Information Network Conference (held in June 2007 at the School of Computer Sciences and Statistics, University of Dublin, Trinity College) consider developments in the field of individual differences in learning (ILDs) which are directly applicable to education and training environments. The key themes identified include:

- (i) the predictive potential of various style tools and the relevance of such information acquired so as to inform planning and design of training in education and workplace settings;
- (ii) the use and development of specific techniques such as concept mapping to elicit understandings, encourage shared understandings and communities of practice and facilitate curriculum re-design;
- (iii) the employment of tools to explore differences in approaches to learning used by different learners so as to inform the design of training and facilitate a better understanding of cultural differences in learning;
- (iv) the design of programmes to heighten teacher/instructor understanding of individual differences in learning so as to promote programmes which are more attuned to both the individual needs of the learner and those of the organisation.

These selected studies respond to Rayner's (2006) timely call for an increasingly more functional research agenda that takes more account of practitioner awareness and applications of cognitive style. This is essential if an informed understanding is to be shared more widely within and amongst training environments. Within this vein,

there is an increasing move towards small-scale practitioner-led action research projects away from larger studies in relation to potential impact (Claxton, 2007).

UK Context

Considering the performance levels of many children within the UK (for example, 20% of 11-year-olds leave primary school functionally illiterate and less than 50% of 16-year-olds achieve 5 GCSE passes including maths and English (Woodhead, 2007)), it can be argued that many children are in receipt of a 'pedagogy of poverty' rather than one of plenty (Tomlinson, 2005).

So despite those announcements of a renaissance of a Learning Age in Britain such as those in 1998 (DfEE, 1998) there remains a large section of the population who have still not tuned into the learning age or culture (Aldridge & Tuckett, 2007). NIACE (2007) have concluded that: "the learning society that all European industrial societies aspire to – a society in which everyone is a confident learner and active citizen – remains a long way out of reach" (Kingston, 2007: 1). In addition to this the Leitch Report highlights a skills crisis within the UK (DIUS, 2007).

Consequently, the UK Government's drive for 50% engagement in Higher Education within the UK (currently 44%) is problematic. Simpson (2007) acknowledges that the risk of drop out from British Universities is approximately 20% in the first year. Millar and Griffiths (2007) identify that if the government's target of 50% engagement is reached without any subsequent improvement in the drop out rate, each year approximately 10% of 18 year olds will endure the experience of quitting before the end of their courses.

Given the increasing heterogeneous nature of those involved in Higher Education and the need for more differentiated instruction to accommodate this, larger student numbers have actually worked against greater personalisation of teaching. In addition, it has also been estimated that approximately 20% of today's UK HE students undertake some form of workplace learning as part of their courses compared to 48% of their European contemporaries (Brennan & Little, 2007) again suggesting an impoverished model for many.

In a climate of increasingly informal, independent and internet related learning activities (NIACE, 2007), a key goal and challenge is to ‘foster students’ abilities to integrate learning over time, across courses, and between academic, personal and community life...” (Shulman, 2004) and thereby encompass a more holistic view of education. Such an integrated approach, encouraging a breadth and depth of understanding is increasingly recognised as important for brain development (Sandy, 2008). More flexible learning pathways for all learners is required. Consequently an understanding of how learning can be more attuned to the needs of individuals is essential.

In affecting such a change, Vermunt (2007) advocates the development of a pedagogy of teacher learning whereby changes in teaching methods are required to accommodate a student’s increasing levels of self regulation. Such pedagogy makes increasing demands on both learners and instructors requiring learners to be more involved in the process of learning and for teachers to be more aware of individual learning differences (ILDs) as they construct and negotiate learning environments (DfES, 2020 Vision Report, 2006). In making such a proposition, Vermunt (2007) argues the need for a ‘super model’ to incorporate affective, social, biological and environmental components. He is not alone in wanting greater unification of constructs in order to better understand individual learning differences. Zhang and Sternberg place cognitive style with other style constructs under the umbrella heading of ‘intellectual styles’. This they define as “one’s preferred way of processing information and dealing with tasks ...[it is] ... to varying degrees... cognitive, affective, physiological, psychological, and sociological...” Zhang and Sternberg (2005: 2). The broad range of constructs comprising the study of personal individual learning differences including gender, personality, intelligence and abilities, self-reference, cognitive styles, learning styles and motivation/attitude formation is also commented on by Rayner (2007). Such a super model needs to consider all aspects that make up a learning profile. As Nielson argues in this edition such a model of change needs to include cognitive, motivational and epistemological factors, as well as the connections between them in order to fully mobilise learning potential. In addition the model needs to be clarify the interrelationships between aspects so as to minimise isolation and diffusion of knowledge (Vermunt, 2007).

In assisting individuals to develop the ‘capacity to learn’, (Claxton, 2007), the way in which cognitive and learning styles approaches encourage learners to consider the processes of learning can be very powerful (O’Malley & Charnot, 1990; Evans & Waring, 2006; Rosenfeld & Rosenfeld, 2004). This is dependent on how such approaches are implemented and crucially how they are discussed in context. developments.

Developing an Understanding of Style(s)

The broad, all encompassing and complex nature of “styles” continues to make the transfer of information into workplace and educational contexts difficult. For example, cognitive styles are typically seen as more habitual than learning styles which are viewed in the literature as being more adaptable and context related. Traditional notions of styles as traits which are intransigent and inflexible (Allport, 1937; Messick, 1984; Schmeck, 1988; Atkinson, 2004) are being challenged. Current thinking emphasises the flexibility of style (Vermunt, 2007) and is moving away from the use of traditional terms such as cognitive style to discussions of intellectual styles (Zhang & Sternberg, 2005), dispositions and individual learning differences (Rosenfeld & Rosenfeld, 2007) and learning patterns (Vermunt, 2007). (The distinction made between states and traits in that the former can be changed and the latter is more stable is not unproblematic as identified by Zhang and Sternberg (2005:34) when they note styles “ can normally be rather stable, except when there is a demand for change of styles by specific situations....”).

Preferring ‘learning pattern’ over ‘style(s)’ as a descriptor of individual differences in learning, Vermunt (2007) argues that patterns have the potential to develop over time and to vary across contexts. As such they can be socialised and modified as a ‘function of the interaction of person, task, and situation’ (Zhang and Sternberg, (2005:34).

Such potential mobility of style holds great promise for educators in that it should be possible for individual educators to modify and adapt their styles if they are cognisant of them and have support and training to develop a wider styles repertoire (Evans & Waring, 2006; Rosenfeld and Rosenfeld, 2007).

The independence of styles versus the context specific nature of them continues to raise a number of questions. For example, to what extent are the knowing, planning and creating styles of Cools and Van Den Broeck mutually exclusive and context dependent? Do people with different cognitive styles approach management roles differently as suggested by Cools and Van Den Broeck? Are certain styles better for the demands of certain roles and how does this concur/conflict with issues of authenticity in management behaviour in relation to developing one's own style in accordance with personality and character? In addition, does the way in which different cognitive styles approach conflict and feedback situations resemble their preferred way of decision making or is this too simplistic? Further complexity is added when investigating causal relationships such as this, especially when the extent of the relationship between one's own style and one's observed behaviours may not always be clear or a sole function of cognitive style (Evans, 2004). Furthermore, if cognitive styles influence the tasks people prefer the most in the work environment, as a manager/trainer do you allow individuals to stay within their comfort zones or encourage them to develop broader approaches?

In using the information we have on intellectual styles, the key value as identified in the selection of papers presented here is in their training potential, enabling trainers to work with students/employees to identify areas of strength and areas to develop as part of their own professional and holistic development.

With this in mind, Vermunt (2007) points to the necessity and importance of teaching and training interventions to enable modifications in learning patterns, but also acknowledges in order to effect positive change, strong and powerful learning environments are required. The challenge therefore becomes the definition of such environments and what they encompass so as to be able to clearly identify how they can enhance an individual's / organisation's capacity for learning.

Learning About Style

Zhang and Sternberg (2005) acknowledge that although purported to be non-pejorative styles have never been value free. The relative currency of one cognitive style over another, it could be argued, varies temporally and spatially and at the individual organisational level. Consequently, that which might be positively valued

in one learning environment may not be in another. The on-going question still remains as to which styles to use and how best to use them for training purposes.

There are many cognitive style tools with differing names, some of which measure similar and others very different aspects of style (Evans & Sadler-Smith, 2006). In an attempt to provide a clearer route map Rayner (2000) employed the term 'learning profile' to represent an umbrella concept to include cognitive style, learning style, learning strategies, preferences, motivation and self perception. How useful this was is debateable.

Moving the field forward, Vermunt (2007) suggests the need for an integrated learning instrument to include existing and affective elements. However, Rayner (2007) questions whether greater agreement on a super-ordinate structure of style is required to establish the key priorities in styles research. Another attempt to clarify the style horizon has been made by Zhang and Sternberg (2005:2) with their development of 'intellectual styles' defined as "One's preferred way of processing information and dealing with tasks ...[it is] ... to varying degrees... cognitive, affective, physiological, psychological, and sociological." In attempting to unify the various intellectual styles encompassed by such a definition they argue that any style may have one or more of the following concepts as part of its underpinnings: preference for "high degrees of structure versus low degrees of structure, for cognitive simplicity versus cognitive complexity, for conformity versus non-conformity, for authority versus autonomy and for group versus individual work." They consider these to be key areas that should be addressed in designing training programmes.

Developing Powerful Learning Environments

From the papers presented in this special edition, four key aspects highlight themselves as important in developing powerful learning environments. These are:

- the need to involve learners more centrally in the process of learning and subsequent development and use of integrated tools to assist this;

- developing a pedagogy of learning styles;
- enhancing teacher sensitivity to ILDs to inform planning, delivery & assessment of learning;
- the essential development of a coherent research agenda to underpin such work.

Involvement of Learners

Regardless of the uncertain verdict regarding the debate over the stability of styles, we do know that a student's involvement in the learning process has a direct, positive and significant effect on academic achievement (Betoret, 2006) and that this is most likely to be achieved in an environment where teachers create a climate for learning which considers individual differences (Opdenakker & Van Damme, 2006).

Several of the papers presented in this special edition suggest a greater need for a 'scholarship of teaching and learning', whereby students study the learning process and the conditions under which learning is most likely to occur for themselves and others. By giving learners a greater voice in pedagogical matters and enabling them to develop their own metacognitive capabilities they would be enabled to be better learners by making connections between what is learned in very different, and typically unconnected settings (Hutchings, 2007).

In order to design courses to match the needs of learners Vermunt (2007) suggests the need for an enhanced understanding of the new student and the ways in which technological developments have led to different patterns of processing amongst members of the mobile generation. A generation to whom multi-tasking and self-directed learning have become more prevalent. Similarly, the application of technological advancements could be used more effectively to design new learning environments attuned to those ILDs.

A Pedagogy of Learning

In attending to ILDs, a key issue is the development of a pedagogy of intellectual styles that is used sensitively, constructively and critically to inform the learner, so as to enable the pursuit of self-directed learning. Vermunt (2007) argues the need to

adapt teaching to certain design principles in order to promote more favourable learning patterns in real settings. Consequently he advocates the customisation of teaching in order to cultivate student learning, with workplace learning as a key contributor to such a pedagogy. Increased development of informal learning opportunities, flexible pathways and peer support also need to be realised.

Such an informed pedagogy with the learner clearly situated at the centre would make learning explicit using specific tools to unearth an understanding in the development of new communities of practice. In their paper Hay and Kinchin show how the use of concept mapping can be used to assess prior learning and to identify differences in understanding amongst students and teachers in both education and workplace settings.

An envisioned 'pedagogy of plenty' would attend to the diverse needs of the learning population taking account of the interplay of intellectual styles with other mediators such as culture (Charlesworth); school context and levels of experience (Evans and Waring; Nielson); prior learning (Hay and Kinchin); type of organisation (Cools and Van Den Broeck); affective elements (Kingston).

Affective aspects of the learning process also need to be considered, Kingston and Nielson in their papers each argue that an analysis of these with both students, employees and those responsible for organising learning in higher education and employment may facilitate a better understanding of the learning process to be developed. Kingston, referring to Riding (2002) highlights the association between negative affect and impairment of working memory capacity. The key questions here are how can we encourage positive affect in order to expand individual potential for and of learning? Should training programmes place greater emphasis on the emotional aspects of learning, as well as consider the extent to which cognitive and affective elements of learning are interrelated? Addressing change at the emotional level is essential (Patrick and Pintrich, 2001) because the attitudes [of learner and instructor] are more resistant to change if the emotional component of the attitude is unmodified in conjunction with the cognitive component, as discussed in the Nielson paper.

Teacher Development

In order to make the move from a “pedagogy of poverty” to a pedagogy of plenty” (Tomlinson, 2005) while catering for the increasing diversity of student learning needs, effective teachers will need to be aware of and use a variety of teaching styles (Kulinna and Cothran, 2003). To do this Nielson argues for more training time to be devoted to how to utilise the information about style(s) in order to apply them more effectively to practice. There is growing evidence that suggests instructional interventions aimed at enhancing teacher awareness of their own cognitive styles and the ways in which such styles impact on classroom practices are enabling teachers to be more aware of their own learning and that of others (Dunn, Griggs, Olson, Beasley, & Gorman, 1995; Lawrence, 1997; Riding & Watts, 1997; Heffler, 2001; Coffield, 2004; Hall, Moseley, Ecclestone & Coffield, 2004; Rosenfeld and Rosenfeld, 2004, 2007; Evans and Waring, 2006), and in so doing helping them to plan for differentiation of learning more effectively (Evans and Waring, 2007). The effects of such interventions have been shown to have lasting impacts on teachers’ attitudes to individual student needs and practice (Nielson, 2007; Rosenfeld and Rosenfeld, 2007).

The adoption of a metacognitive approach has also been advocated whereby an individual is encouraged to analyse their own learning approaches in order to enhance teacher sensitivity to ILDs as discussed in the papers by Nielson, Evans & Waring and Kingston. Significant work in this area has been carried out by Rosenfeld and Rosenfeld (2007:283) who identify 4 key principles in the development of teacher sensitivity to ILDs:

- favouring a constructivist approach in which teachers examine their own belief systems about individual learning;
- favouring a collaborative approach fostered through the creation of a safe and supportive learning environment;
- teachers required to recognise and actively increase their repertoire for addressing diverse learner individual learning differences in themselves, colleagues and students;
- Reinforcing feedback loop for the teachers based on the increased success of their students and other learners enabling the teachers to move from

pathognomonic (blame-the-learner) beliefs about students to a broader understanding about how the student learns and what the teacher can do to intervene.

Developing a Coherent Research Agenda

Research activity needs to support coherence and consensus in style theory. Rayner (2007:296) asks a key question: “Do we need to develop new forms of research as part of a paradigm shift and a consensual epistemology for Style Differences Research?” However, research in this area is dominated by positivist concepts and an essentialist ontology. Constructivist psychology, phenomenological and practitioner evidence-based enquiry is much needed to (re)assert the theoretical integrity of styles research. Rayner (2007) and Vermunt (2007) both acknowledge that work on intellectual styles still fails in delivery and impact on practice.

The integration of research and practice is essential. Research into individual learning differences has implications for instructors in teacher education programmes and for educators providing professional development opportunities in the workplace. Continuing professional development programmes should be designed to promote the more effective use of styles and in so doing will enable teachers/instructors to use a wider variety of styles and in such ways develop instructor understanding of teacher pedagogical knowledge. Also, in looking to the future, teachers and teacher education programmes need to consider which teaching styles are best suited to the needs of the individual (Kulinna and Cothran, 2003:9) and develop increased criticality in the value and limitations of style applications.

However, attempts to isolate variables that determine teachers’ preferred teaching style have to date revealed very little about teachers’ use and perception of various teaching styles (Kulinna and Cothran, 2003), or the stability of such teaching styles (Evans, 2004). Much more research is needed in these areas.

Looking to the Future

The papers in this special edition have considered ways in which an understanding of style(s) and associated tools can be used to enhance the learning process through a metacognitive approach. The degree of stability of style(s) is debated with little consensus evident. However, it is clear that style(s) can be modified through the adoption of appropriate strategies. More research is required to verify such findings and to agree upon 'an established definition of style difference securely located within differential psychology as a concept, construct and meaning... [and to consider through the richness afforded by qualitative study] the '...pedagogic implications of style differences in instruction and training' (Rayner, 2007: 296).

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