

## Chapter II

# Personalizing Style in Learning: Activating a Differential Pedagogy

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### ABSTRACT

*The need to personalize Web-based learning environments on individuals is the main argument of this chapter. The activation of a “differential pedagogy” is proposed, by taking advantage of personalization technologies, in contrast to uniform traditional instructional practices. From the perspective of an educationist, the issue of learner diversity is addressed and discussed, substantiating the notion of individualization in learning. In particular, style is considered as a basic parameter of a new e-pedagogy, in order to applicably reform future educational practices.*

### INTRODUCTION

A theme running through-out this chapter is the idea of personalizing learning. In the UK, recent Government policy has seen a remodelling of the school workforce and national curriculum. It has in large part taken on what has been described as the transforming reform of an educational system that is now deeply implicated with *personalized education* and e-technology (Rayner, 2007a; Ritchie & Deakin Crick, 2007). What the UK policy does not consider in any detail is the kind of learning and pedagogy required for personalized education. There is much to do to make best use

of emerging new technology and opportunities for using e-learning to support diversity in the classroom. Researchers in the field of e-technology, for example, have increasingly been drawn to the design of adaptive learning systems centring upon the learner, firstly as an individual (Shi, Revithis & Chen, 2002), and secondly when learning in a social context (Naismith, 2005).

Much of the modernizing direction in the research of e-technology, in respect to learning design, echoes previous work in educational psychology (Riding & Rayner, 1995), associated with the advent of an information superhighway and the idea of an individualized learning sys-

tem (ILS). More recent developments, both in advancing the idea of the ILS, as well as other applications for learning design, focus upon the learner, and re-working theories of differential psychology. For example, developments in web-based learning (Graf, 2003; Fiorina et al., 2007), adaptive hypermedia (Brusilovsky & Peylo, 2003; Brusilovsky & Nejd, 2004), web-based personalization (Germanakos et al., 2007), tutoring systems configured around artificial intelligence (Haykin, 1998; Curilem et al., 2007), learner responses to multi-media and blended e-learning (Ghinea & Chen, 2003; Derntl & Motschnig-Pitrik, 2005; Kimberly, 2007). It is this work which again raises the questions of learner performance and pedagogy: that is, how the learner best learns and most prefers to learn; and how a teacher develops their teaching craft to accommodate the learner.

The intention in this chapter is to examine a relationship between learning styles, individual differences and pedagogy by addressing several particular questions about personal or individual differences in the learner and learning. These questions include firstly asking how teachers can more successfully work in 1) dealing with learning diversity and individual difference—that is – operationalizing the concept of a personalized education; and 2) establishing *learning* and *involving the learner* in a pedagogy that seeks the goal of learning mastery – while managing differences in the challenge of developing pedagogic practice.

In considering each of these questions, an account of how the theory of cognitive style and a differential pedagogy can impact upon performance in learning and teaching will be examined. This chapter ends by asking what is likely, by the year 2020, to be the preferred or accepted pedagogic face of instructional design, teaching and learning in a formal educational setting. A response to this last question requires considering the place of an individual learner as a student in a '*boundedless space for learning and teaching*', as well as the utilization of technologies and media available

for developing a '*post-modern pedagogy for Personalized Education*'. This development, in turn, arguably requires work aimed at advancing and re-activating the concepts of personalized learning, e-learning and a differential pedagogy.

## INDIVIDUALS LEARNING: THEORY AND PRACTICE

Diversity in the learning community is a very real challenge in any educational context (Rayner, 2007a). It is, however, not only a social phenomenon. McNerney (2005), for example, while pointing to the increasing importance of social psychology and the study of cross-cultural contexts in this area, states that there is less variation between groups than within groups and diversity is a multi-faceted phenomenon. Individual differences, and in particular the psychology of self associated with cognitive style and self reference (Riding and Rayner, 2000; Riding and Rayner, 2001), are acknowledged aspects of personal performance in effective learning and teaching (Prashnig, 1998; Reid, 2005; Rayner, 2007b). The focus in this chapter is *personal diversity*, and the term is used to refer to a traditional knowledge domain of individual differences and an underpinning theory of differential psychology (Jonassen & Grabowski, 1983; Messick, 1984; Furnham, 2001; Collis & Messick, 2001; Rayner, 2001, 2007b).

A practical beginning for researcher and teacher alike in managing educational diversity is to focus upon individual differences and personal diversity. The following actions provide a basis for better understanding the interaction between learner, learning and teaching and how this might contribute to informing an educational approach to personal diversity in the learning and teaching context:

1. **Understanding the Psychology:** Learner and learning performance

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