Cognition, Creativity, and Learning

INTRODUCTION

While personality relates to one’s behavior as a whole, cognitive function relates more explicitly to mental information processing. Since the majority of system development work and IT work in general involves intellectual functioning, it is not difficult to see that how a person performs “mind work” is a relevant psychological factor in IT work. In fact, it is in the area of cognition that a majority of psychological research in computing/information systems has been carried out.

This section, however, does not aim primarily to present and discuss specific research findings. Rather, by reference to numerous, relevant sources, it aims to present in “layman’s terms” main points on cognitive, creativity, and learning styles to a broad audience of IT professionals and academics. It then tries to relate differences in style to effectiveness of IT work, and argues for the benefits of style awareness and conscious cooperation among IT professionals. Finally the inclusion of “style wisdom” in the psychological intelligence set of the IT professional is promoted.

COGNITIVE STYLE

According to Hayes and Allinson (1998), cognitive style is “a person’s preferred way of gathering, processing, and evaluating information.” Streufert and Nogami (1989) identify cognitive style as a pervasive personality vari-
able. It influences what information in one’s environment a person focuses on and how he/she interprets this information.

One main way of dichotomizing cognitive functioning is the analytic, sequential versus intuitive, wholistic functioning. Some psychologists have referred to the former as “left-brain thinking” and the latter “right-brain thinking” (although other scholars may consider this an oversimplification). The former focuses on “trees,” and the latter sees the “forest” in solving problems and coming to conclusions. There are suggestions that link MBTI temperaments with the two predominant cognitive styles. Huitt (1992) identifies NTs and SJs as more linear and serial, and NFs and SPs as more wholistic and intuitive.

We have all likely seen classic examples of each style, either at work or elsewhere. The analytical person abstracts, analyzes, structures, organizes, and plans systematically. He can articulate clearly and may focus on details. However he can miss “intangible clues” such as facial expressions or other “body language.” He may also be criticized for being bureaucratic with limited imagination.

The intuitive person integrates many perspectives, finds problems and discovers opportunities, and generates new visions. She is sensitive to both logical and emotional issues, viewing them as one. However, she may overlook important details, may not communicate precisely enough, and may put off decisions.

The analytic is like a tax lawyer, the intuitive, like a criminal lawyer; the analytic like an accountant or chemist, the intuitive like an athlete or artist; the analytic prides himself on intellectual rigor, the intuitive on imagination. As with personalities, most people may not fall exactly into two opposing “boxes”; however, there appears to be a definite preference in one direction.

Adaptor-Innovator

One of the main theories on cognitive styles, along with an instrument to evaluate the style, is the Kirton Adaptation/Innovation theory. This theory of cognitive strategy relates to the amount of structure that a person feels appropriate within which to solve a problem or to embark on creativity.

The Adaptor (left-brained) prefers to work within current paradigms, focusing on doing things better, while the Innovator (right-brained) prefers to “color outside the lines,” constructing new paradigms, focusing on doing things differently.” According to psychologist/consultant Michael Kirton (1989), the Adaptor favors precision, reliability, efficiency, prudence, discipline, and conformity. He seeks solutions in “tried and true” ways,
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