Chapter 2.5
Developing Prescriptive Taxonomies for Distance Learning Instructional Design

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INTRODUCTION

There are simple answers to all complex problems… and they are uniformly wrong. -- H.L. Mencken

One of the central problems and corresponding challenges facing the multidisciplinary fields of distance learning and instructional design has been in the construction of theory-grounded, research-based taxonomies for prescribing what particular strategies and approaches should be employed when, how, and in what combination to be most effective and efficient for teaching specific knowledge domains and performance outcomes. While numerous scholars and practioners across a wide range of associated instructional design fields have created a rich variety of effective, efficient, and very current prescriptions for obtaining specific learning outcomes in specific situations (Anderson & Elloumi, 2004; Marzano, 2000; Merrill, 2002a; Nelson & Stolterman, 2003; Reigeluth, 1999a; Shedroff, 1999; Wiley, 2002), to date, no single theory-grounded and research-verified unifying taxonomic scheme has successfully emerged to address all existing and potential educational problems across the phenomena of human learning and performance.

BACKGROUND

Descriptive taxonomies developed in educational theory and practice have provided rich organizational schema for classifying the structure of conditions for learning describing the approaches,

types, events, methods, and goals of instruction (Gagne, 1977). While affective and psychomotor capabilities have gained increasing importance (Krathwohl, Bloom& Masia, 1964, Martin & Briggs, 1986), classic instructional design theory has tended to focus on the cognitive domain, as exemplified by the widely adopted hierarchical taxonomies of Bloom (1956) and Gagne, Briggs, and Wager (1992). There have been serious efforts to revise and update *Bloom's Taxonomy* with the applied focus towards more specific and pragmatic "best practice" teaching strategies in instruction (Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, et al., 2000). However, few correspondingly robust prescriptive taxonomies have emerged to encompass the optimal design solutions for distance education and online e-learning professions. This article examines the critical issues involved with understanding the nature and function of prescriptive educational taxonomies for improving the efficiency and effectiveness of rigorous instructional design solutions adaptable and applicable to the burgeoning field of online learning, user-centered design, and technologically distributed distance learning environments.

MAIN FOCUS: INSTRUCTIONAL TAXONOMIES - WHAT THEY ARE AND WHY THEY MATTER

In his hallmark narrative work on the complexities of successfully building a learning environment, media pioneer Edgar Dale identified important considerations for the development of any prescriptive taxonomy for instruction, as well as this encyclopedia broadly conceived:

Indeed product and process must not be separated, any more than we would separate form and content…A major issue in all learning deals with the processes by which learning experiences become structured, organized, mapped, patterned, *clustered, and systemized. We group experiences, using some kind of framework, paradigm…schema, summary, matrix, model, unit, brief, diagram, category, concept, hierarchy, grid, or outline. We use hierarchies, superordination and subordination…All these terms indicate a linking, a relating of experience on the basis of their differences and likenesses. Process and product, form and content become fused, structured. (pp. 82-83)*

Human learning and the collateral formation, representation, acquisition, generation, and creation of knowledge in the mind of the learner are unquestionably immensely ill-structured and complex human problems (Reigeluth, 1999b). Philosophers and scholars have explored, for ages, questions of ontology and epistemology, and numerous competing schools of thought (i.e., instructional design paradigms) have developed across a wide array of knowledge domains (Richey, 1986; Visscher-Voerman & Gustafson, 2004). The enactive, intentional, unifying higher-order problem-solving endeavor is *design* itself, and numerous universal principles, exemplars, and epitomes of design have emerged (Lidwell, Holden, & Butler, 2003). "Designing is, therefore, more than ordering and arranging, more than constructing. It is composing. It is using the codes and pattern languages of a domain to create wholes with not only parts and relationships but also ordering-underlying principles (Rowland, 2004, p. 40)." Critical in this human design process for instruction are systems thinking, creativity and evaluative judgment, metacognitive awareness, and the seemingly paradoxical nurturance for an eclectic, broad-minded tolerance for ambiguity while simultaneously possessing a pragmatically strong drive towards tangible closure (i.e., deliverables) in the design activity (Lasnik, 2003b). To illustrate the relative complexity of this phenomenon, an easy-to-grasp architectural analogy is provided in Table 1.

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