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Abstract

As faculty, our goals for students are often tacit, hidden not only from students but from ourselves as well. We present a conceptual framework for considering teaching goals ? what we want our students to achieve ? that encourages us to think more broadly about what we mean by achieving in our knowledge domains. This framework includes declarative knowledge (?knowing that?), procedural knowledge (?knowing how?), schematic knowledge (?knowing why?) and strategic knowledge (?knowing when, where and how our knowledge applies?). We link the framework to a variety of assessment methods and focus on assessing the structure of declarative knowledge ? knowledge structure. From prior research, we know that experts and knowledgeable students have extensive, well-structured, declarative knowledge; not so novices. We then present two different techniques for assessing knowledge structure ? cognitive and concept maps, and a combination of the two ? and provide evidence on their technical quality. We show that these maps provide a window into the structure of students declarative knowledge not otherwise tapped by typical pencil-and-paper tests. These maps provide us with new teaching goals and new evidence on student learning. Based on an

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invited address, Facoltà di Ingegneria dell'Università degli Studi di Ancona, June 27, 2000. This research was supported, in part, by the Center for Research on Evaluation, Standards, and Student Testing (Grant R117G10027), and by the National Science Foundation (Nos. ESI 95-96080). The opinions expressed here represent those of the authors and not necessarily those of the funding agency. (HRK / Abstract übernommen), Shavelson, Richard J., E-Mail: richs@stanford.edu