Implications of Cognitive Psychology for Educational Testing

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The purpose of this review is to examine views about learning and the learner grounded in cognitive psychology and to discuss their implications for educational testing. The new perspectives about learning and the learner suggested by cognitive psychology imply changes in educational testing. The first part of this paper compares perspectives about learning and the learner in cognitive psychology with traditional perspectives. The second part describes its implications for educational testing. The goals of educational testing should be the improvement of learning and instruction, achieving these goals in the "real" society, and a symbiotic relationship between cognitive psychologists and traditionalists in educational testing.

KEY WORDS: cognitive psychology; learning; learner; educational testing.

INTRODUCTION

Educational testing is a very important instrument for optimum decision-making in education. Perspectives about learning and the learner influence educational values, goals, contents, and methods of educational testing. Therefore, examining the underlying assumptions about the nature of learning and the learner in educational theories and practices should be a starting point for adequate educational testing.

Traditional perspectives about learning and the learner in educational testing were derived from psychometrics. Psychometrics was developed in the context of individual differences in psychology and focused on static assessment of differences rather than on the assessment of changes due to learning (Shepard, 1991). From classical test theory through the Rasch

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model to item-response theory, psychometric research has produced a variety of powerful models for educational and psychological measurement. There are also variations aimed at criterion-referenced or domain-referenced, rather than norm-referenced, interpretations. Despite varying assumptions from one to another, all these variations are generally aimed at estimating a person's location on an underlying latent variable.

However, recent researchers in cognitive psychology have developed relatively new perspectives about learning and the learner in comparison with traditional perspectives. Although cognitive psychology is not a label for a unified science, but rather a spectrum of researchers and theorists who use a variety of methods to study an equally diverse array of research problems, cognitive psychologists share in common the view that the study of human cognition is the central subject of inquiry for psychological science (Snow and Lohman, 1989). Although cognitive psychologists likely hold both shared and idiosyncratic ideas about learning and the learner, if new views about learning and the learner are suggested by cognitive psychologists, they should have strong implications for educational testing.

The purpose of this review is to examine new perspectives about learning and the learner grounded in cognitive psychology in comparison with traditional perspectives and to discuss their implications for educational testing. This review will not provide detailed research findings from cognitive psychology; however, it will provide a broad overview of the differences and of the growing interaction between cognitive research and psychometrics. It will point to new directions being developed in educational testing.

PERSPECTIVES ON LEARNING AND THE LEARNER

This section will describe new perspectives about learning and the learner grounded in cognitive psychology in comparison with traditional psychometric perspectives. Although these comparisons are too simple and general, they demonstrate the sharp contrast between the traditional views and the cognitive psychologists' views about learning and the learner.

The Learner

The traditional psychometric perspectives of the learner can include two models of learner: the tabula rasa model and nativism. The tabula rasa model rests on the premise that experience writes on the blank tablet of the mind. The learner passively receives information from the environment.