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...
model to item-response theory, psychometric research has produced a va-
riety of powerful models for educational and psychological measurement. 
There are also variations aimed at criterion-referenced or domain-refer-
enced, rather than norm-referenced, interpretations. Despite varying as-
umptions 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 sci-
ence (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 psy-
chologists, 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 educa-
tional testing. This review will not provide detailed research findings from 
cognitive psychology; however, it will provide a broad overview of the dif-
fferences and of the growing interaction between cognitive research and psy-
chometrics. 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.