

Research Report ETS RR-13-29

A CBAL™ Science Model of Cognition: Developing a Competency Model and Learning Progressions to Support Assessment Development

Lei Liu

Aaron Rogat

Maria Bertling

December 2013

ETS Research Report Series

EIGNOR EXECUTIVE EDITOR

James Carlson Principal Psychometrician

ASSOCIATE EDITORS

Beata Beigman Klebanov Gary Ockey
Research Scientist Research Scientist
Heather Buzick Donald Powers

Research Scientist Managing Principal Research Scientist

Brent Bridgeman Gautam Puhan

Distinguished Presidential Appointee Senior Psychometrician

Keelan Evanini John Sabatini

Managing Research Scientist

Managing Principal Research Scientist

Marna Golub-SmithMatthias von DavierPrincipal PsychometricianDirector, Research

Shelby Haberman Rebecca Zwick

Distinguished Presidential Appointee Distinguished Presidential Appointee

PRODUCTION EDITORS

Kim Fryer Ruth Greenwood

Manager, Editing Services Editor

Since its 1947 founding, ETS has conducted and disseminated scientific research to support its products and services, and to advance the measurement and education fields. In keeping with these goals, ETS is committed to making its research freely available to the professional community and to the general public. Published accounts of ETS research, including papers in the ETS Research Report series, undergo a formal peer-review process by ETS staff to ensure that they meet established scientific and professional standards. All such ETS-conducted peer reviews are in addition to any reviews that outside organizations may provide as part of their own publication processes. Peer review notwithstanding, the positions expressed in the ETS Research Report series and other published accounts of ETS research are those of the authors and not necessarily those of the Officers and Trustees of Educational Testing Service.

The Daniel Eignor Editorship is named in honor of Dr. Daniel R. Eignor, who from 2001 until 2011 served the Research and Development division as Editor for the ETS Research Report series. The Eignor Editorship has been created to recognize the pivotal leadership role that Dr. Eignor played in the research publication process at ETS.

A $CBAL^{\mathrm{TM}}$ Science Model of Cognition: Developing a Competency Model and Learning Progressions to Support Assessment Development

Lei Liu, Aaron Rogat, and Maria Bertling Educational Testing Service, Princeton, New Jersey

Find other ETS-published reports by searching the ETS ReSEARCHER database at http://search.ets.org/researcher/

To obtain a copy of an ETS research report, please visit http://www.ets.org/research/contact.html

Action Editor: James Carlson

Reviewers: Randy Bennett and Diego Zapata

Copyright © 2013 by Educational Testing Service. All rights reserved.

ETS, the ETS logo, and LISTENING. LEARNING. LEADING. are registered trademarks of Educational Testing Service (ETS). CBAL is a trademark of ETS.

