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978-0-521-86549-4 - Cognitive Diagnostic Assessment for Education: Theory and Applications

Edited by Jacqueline P. Leighton and Mark J. Gierl

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Cognitive Diagnostic Assessment for Education

With the current push toward educational reform, there is great potential for innovation and change, particularly in large-scale testing. One area where change is possible is in cognitive diagnostic assessment (CDA). Researchers in educational measurement and cognitive psychology are finally in a position to design tests targeted specifically to providing valuable information about students' cognitive strengths and weaknesses. This book organizes into one volume what is known about CDA in education, including its conceptual and philosophical basis, methods, and applications. The complete list of topics includes educational demand, philosophical rationale, construct validity, cognitive methods, test construction, statistical models, and unresolved issues (e.g., how to best translate diagnostic information into teaching practices). The book presents a comprehensive and up-to-date examination of CDA in education.

Dr. Jacqueline P. Leighton is Associate Professor of Educational Psychology at the University of Alberta and a registered psychologist by the College of Alberta Psychologists. Her specialization is cognitive-based assessment, in particular the design of educational and psychological testing instruments to measure higher-level thinking skills. Professor Leighton's current research is focused on examining the usability of cognitive models for informing educational tests. She is a member of the American Educational Research Association, National Council on Measurement in Education, and Canadian Society for the Study of Education. Her research is funded by the Social Sciences and Humanities Research Council of Canada and the Natural Sciences and Engineering Council of Canada.

Dr. Mark J. Gierl is Professor of Educational Psychology and Director of the Centre for Research in Applied Measurement and Evaluation (CRAME) at the University of Alberta. His specialization is educational and psychological testing, with an emphasis on the application of cognitive principles to assessment practices. Professor Gierl's current research is focused on differential item and bundle functioning, cognitive diagnostic assessment, and assessment engineering. His research is funded by both the College Board and the Social Sciences and Humanities Research Council of Canada. Dr. Gierl holds the Canada Research Chair in Educational Measurement.

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Theory and Applications

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CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press

32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org

Information on this title: www.cambridge.org/9780521865494

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First published 2007

Printed in the United States of America

A catalog record for this publication is available from the British Library.

Library of Congress Cataloging in Publication data

Cognitive diagnostic assessment for education: theory and applications / edited by Jacqueline P. Leighton, Mark J. Gierl.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-521-86549-4 (hardback)

ISBN 978-0-521-68421-7 (paperback)

1. Educational tests and measurements. 2. Cognition – Testing. I. Leighton, Jacqueline P. II. Gierl, Mark J. III. Title.

LB3051.C622 2007

371.26'2 – dc22 2006035160

ISBN 978-0-521-86549-4 hardback

ISBN 978-0-521-68421-7 paperback

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