

ENCOURAGING INNOVATION

Encouraging Innovation: Cognition, Education, and Implementation is of interest to people who desire to become more innovative in their daily lives and careers. Part I discusses the cognitive and social skills required for innovation – reasoning, problem solving, creativity, group decision making, and collaborative problem solving. The second part discusses education – the development of cognitive skills and talent, application of relevant learning theories, methods, and curricula for enhancing creativity, creativity across disciplines, and design education. Part III discusses the implementation of these skills in society – the transition from theory to practice, business innovation, social innovation, and organizational support. Whereas business innovation is related to commercialization, market demands, and profitability, social innovation addresses fulfilling social needs and public demands. Organizational support for innovation occurs at international, national, agency, and regional levels.

STEPHEN K. REED is Emeritus Professor of Psychology at San Diego State University. He is the author of *Psychological Processes in Pattern Recognition* (1973), *Word Problems: Research and Curriculum Reform* (1999), *Cognitive Skills You Need for the 21st Century* (2020), *Thinking Visually* (2nd edition, 2021), and *Cognition: Theory and Applications* (10th edition, 2022).

ENCOURAGING INNOVATION

Cognition, Education, and Implementation

STEPHEN K. REED

San Diego State University



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press & Assessment
978-1-009-39039-2 — Encouraging Innovation: Cognition, Education, and Implementation
Stephen K. Reed
Frontmatter
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Shaftesbury Road, Cambridge CB2 8EA, United Kingdom
One Liberty Plaza, 20th Floor, New York, NY 10006, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India
103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment,
a department of the University of Cambridge.

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education, learning and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781009390392

DOI: 10.1017/9781009390408

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place without the written permission of Cambridge University Press & Assessment.

First published 2023

A catalogue record for this publication is available from the British Library

Library of Congress Cataloging-in-Publication Data

NAMES: Reed, Stephen K. author.

TITLE: Encouraging innovation : cognition, education, and implementation /
Stephen K. Reed, San Diego State University.

DESCRIPTION: New York, NY : Cambridge University Press, 2023. | Includes
bibliographical references and index.

IDENTIFIERS: LCCN 2023008142 | ISBN 9781009390392 (hardback) |
ISBN 9781009390422 (paperback) | ISBN 9781009390408 (ebook)

SUBJECTS: LCSH: Creative thinking. | Cognitive learning. | Educational
innovations.

CLASSIFICATION: LCC LB1062 .R43 2023 | DDC 370.15/7—dc23/eng/20230608
LC record available at <https://lcn.loc.gov/2023008142>

ISBN 978-1-009-39039-2 Hardback

ISBN 978-1-009-39042-2 Paperback

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or accuracy of URLs for external or third-party internet websites referred to in this
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*To Tom Carey
for his inspiration and guidance*

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Preface

I enjoy the challenge of integrating knowledge and a book on innovation provided me with my biggest challenge. How does a writer begin to organize a book on a topic so extensive? When I searched for the word ‘innovation’ in Google Scholar my computer returned 4,670,000 hits in 0.05 seconds.

One approach to narrowing my search would be to focus on a particular type of innovation, but this approach would interfere with my hope for a more extensive integration. I decided to emphasize breadth rather than depth by providing a broad overview that will assist readers in establishing a conceptual framework for continuing their journey into specific topics. The framework begins with the cognitive skills that are needed for innovative thinking, continues with educational methods to teach these skills, and ends with the implementation of these skills in society.

My goal is to write a book that will help prepare college students and practitioners for the application of innovative thinking in their lives. I recognized that potential readers have different experiences and skills that will make some parts of the book more familiar than others. Part I on cognitive skills should look familiar to psychologists, Part II on teaching these skills should look the most familiar to educators, and Part III on implementation should look the most familiar to practitioners. I therefore tried to reduce jargon and provide concrete examples for theoretical frameworks to accommodate these differences.

So how does one select articles from the four million hits on Google Scholar? First, I focused on articles that included integrative overviews to point readers toward helpful resources. Second, I emphasized articles published in the previous five years to provide current references. Third, I selected articles that made impressive advances in our understanding of innovation. Although I did not intentionally select articles based on geographical location, I soon discovered that the articles I did select were written by scholars throughout the world. I often identify these locations so readers can appreciate that encouraging innovation is an international pursuit.

This book was inspired by my many conversations with Tom Carey. Tom is involved in the Workplace Innovation Network for Canada by leading curriculum development projects in Ontario, British Columbia, and Brisbane, Australia. We became colleagues at the Center for Research in Mathematics and Science Education at San Diego State University when Tom led an earlier project on improving mathematics education within the California State University system. I dedicate this book to him because I would not have written it without his enthusiastic support.

I would like to thank David Repetto, Rowan Groat, and Clare Dennison and others at Cambridge University Press for their skillful collaboration on its publication. Amala Gobiraman at Lumina Datamatics Ltd. headed the production team that turned my manuscript into a book. The copy editor, Mitch Fitton, and indexer, Carol Bailey, assisted her. As has occurred for all of my books, my wife Karen continued to manage many aspects of our lives to give me more time to read, reflect, and write. I hope that the final result is a book that will appeal to readers and provide them with a broad overview of this exciting topic, as well as practical ideas for cultivating innovative thinking.