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Foreword and Overview

Marilyn Murphy

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Handbook on
**Innovations in
Learning**

Editors

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The Center on Innovations in Learning (CIL) is a national content center established to work with regional comprehensive centers and state education agencies (SEA) to build SEAs' capacity to stimulate, select, implement, and scale up innovations in learning.

Learning innovations replace currently accepted standards of curricular and instructional practice with new practices demonstrated to be more effective or more efficient in the context in which they are applied.

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Table of Contents

| | |
|------------------------------------|----------|
| Foreword and Overview | v |
| <i>Marilyn Murphy</i> | |

Part 1: Innovation in Learning

| | |
|--|-----------|
| What Is an Innovation in Learning?..... | 3 |
| <i>Sam Redding, Janet S. Twyman, and Marilyn Murphy</i> | |
| Stimulating Innovation (or Making Innovation Meaningful Again) | 15 |
| <i>Maureen M. Mirabito and T. V. Joe Layng</i> | |
| Innovation, Implementation Science, and Data-Based Decision Making: Components of Successful Reform | 31 |
| <i>Ronnie Detrich</i> | |
| The Logic of School Improvement, Turnaround, and Innovation..... | 49 |
| <i>Sam Redding</i> | |

Part 2: The Student in Learning Innovation

| | |
|--|------------|
| Innovative Practice in Teaching the English Language Arts:Building Bridges Between Literacy In School and Out | 61 |
| <i>Michael W. Smith</i> | |
| Innovations in Language and Literacy Instruction..... | 75 |
| <i>Michael L. Kamil</i> | |
| Specialized Innovations for Students With Disabilities | 93 |
| <i>Joseph R. Boyle</i> | |
| Getting Personal: The Promise of Personalized Learning | 113 |
| <i>Sam Redding</i> | |

Part 3: Technology in Learning Innovation

| | |
|--|------------|
| Education + Technology + Innovation = Learning? | 133 |
| <i>T.V. Joe Layng and Janet S. Twyman</i> | |
| Games in Learning, Design, and Motivation | 149 |
| <i>Catherine C. Schifter</i> | |
| Advances in Online Learning..... | 165 |
| <i>Herbert J. Walberg and Janet S. Twyman</i> | |
| Learning, Schooling, and Data Analytics..... | 179 |
| <i>Ryan S. J. d. Baker</i> | |

Part 4: Reports From the Field: Innovation in Practice

| | |
|---|------------|
| Idaho Leads: Applying Learning In and Out of the Classroom to Systems Reform | 193 |
| <i>Lisa Kinnaman</i> | |
| Using Response to Intervention Data to Advance Learning Outcomes..... | 207 |
| <i>Amanda M. VanDerHeyden</i> | |
| Innovation in Career and Technical Education Methodology | 227 |
| <i>Mark Williams</i> | |
| Glossary | 247 |
| <i>Robert Sullivan</i> | |
| Authors' Biographies | 263 |

Foreword and Overview

Marilyn Murphy

The *Handbook on Innovations in Learning* focuses on innovations—both methodological and technological—in teaching and learning that promise to surpass standard practice in achieving learning outcomes for students. The experts who have written chapters in this *Handbook* first identify the underlying principles of learning and then describe novel, balanced approaches, based on these principles, to accelerate learning.

The idea for the *Handbook* emerged from a policy context ripe for such a contribution to practice. In November 2010, a national education technology plan (NETP) was released by the U.S. Department of Education, a project led by the department’s Office of Educational Technology. The purpose of the report and the corresponding initiative, according to Secretary of Education Arne Duncan, was to “leverage the innovation and ingenuity this nation is known for to create programs and projects that every school can implement to succeed” (2010). The plan describes a model of learning centered around personalized learning experiences, with a reliance on state-of-the-art technology as a vehicle to help all students reach their learning potential. The notion of harnessing innovation as a lever to improve success in schools is referenced numerous times in the NETP report, as is the call to power learning by technology.

Ultimately, the purpose of the national technology initiative is about the student in the classroom and the learner outside the classroom. One might rightly ask, “What would success look like in these contexts?” A successful initiative would see teachers energized and empowered to be more effective in their craft with better knowledge of the best and most promising practices and the tools to implement them strategically and effectively. Outside the classroom, a generation

of students would emerge who are engaged, excited, and—having embraced and cultivated 21st-century skills—ready to continue lifelong learning.

In its 2012 competition for its comprehensive centers, the U.S. Department of Education invited proposals to establish a new content center dedicated to discovering, supporting, and disseminating “innovations in learning.” In its successful response to this call for proposals, the team at Temple University in Philadelphia and its partner, the Academic Development Institute (ADI) in Illinois, presented a design of work that linked the practices of instruction and their underlying principles of learning. To define the work of the newly funded center, learning principles and variations in standard practice would be identified with an eye to their potential as an improvement on what is currently accepted standard practice—innovations. The center would focus on the instructional core—teachers, students, and content—while addressing the recently expanded nature of learning environments and, at the same time, enhancing the teaching and learning process with novel solutions—innovations (Redding, 2012).

As pointed out in the NETP report and taken as axiomatic in the foundation of the new center, technology is a vehicle for managing, delivering, and engaging students in a rich curriculum and exciting learning activities. What exactly is innovation? Innovation is a slippery concept, chameleon-like in its ability to change aspects according to varying contexts. Godin (2013) reminds us that the term dates back to the Greeks and Romans, coming into widespread use after the Reformation. Derived from the Latin “innovare,” meaning “to renew,” “to alter,” it first appears in English in the 16th century, when it was used mainly pejoratively in reference to new religious practices and political revolution but, in some contexts, only “something newly introduced.” Now, generally meaning “something new; a new idea, method, or device,” the word has undergone semantic amelioration and is frequently used with strongly positive connotations, often suggestive of a significant, even momentous advance. Applied in the exaggerations of advertising, “innovation” is often attributed to some product or process a mere degree beyond “imitation,” something that seems at first glance different but which, on a more careful examination, reveals only superficial change rather than substantial differences in utility or efficiency. We all know this game. Education is not unlike other professions or disciplines, where designating something as “innovative” is given broad parameters. As Huberman (1973) correctly notes, “The educational system is too often prone to change in appearance as a substitute for change in substance” (p. 6).

The chapters in this *Handbook* consider best practice from the perspective of topics emerging as priorities in education. Each of the authors presents a concise review of the literature on the topic of the chapter, an explanation of what the topic means in relation to education, and, importantly, suggests action principles for states, districts, and schools. The *Handbook* is structured into four

parts. Part One deals with Innovation in Learning and opens with the chapter *What Is an Innovation in Learning?* Authors Sam Redding, Janet Twyman, and Marilyn Murphy grapple with defining innovation in the context of learning and teaching. The chapter provides guidance on the necessary conditions for innovation, including recognizing what a culture of innovation looks like, and suggests a framework for identifying innovations in learning.

In *Stimulating Innovation (or Making Innovation Meaningful Again)*, Maureen Mirabito and Joe Layng probe the contexts and conditions in which innovation can flourish, noting that “innovation is as much about systemic change as it is about leadership and culture.” They argue for intentional planning, a realistic approach, and creativity in encouraging a culture willing to embrace innovation.

Ronnie Detrich considers the importance of the “science of implementation” in his chapter *Innovation, Implementation Science, and Data-Based Decision Making: Components of Successful Reform*. The author includes several guiding principles for the effective diffusion of innovations and seven principles of successful implementation. A cautionary tale on the failed California class size reduction initiative provides a graphic lesson of an undisciplined and uncoordinated attempt to implement change. In *The Logic of School Improvement, Turnaround, and Innovation*, Sam Redding takes a bird’s-eye view of the world of school improvement in the last 20-plus years and identifies a hopeful pattern of potential success. Redding looks at the processes of school improvement, turnaround, and innovation, and finds commonalities in what we learn from each that bode well for a positive trajectory of student achievement.

Part Two, *The Student in Learning Innovation*, considers the student in the innovation process. In their respective chapters, authors Michael Smith and Michael Kamil consider literacy instruction and practice. Smith’s *Innovative Practice in Teaching the English Language Arts: Building Bridges Between Literacy In School and Out* reflects on his previous studies of the literate lives of adolescent boys and recommends that some of his findings about what boys read outside of school be harnessed to advance their in-school literacy practice. In Kamil’s chapter on *Innovations in Language and Literacy Instruction*, we are urged to be deliberate about selecting “mature” innovations that are evidence driven. Foremost among these innovations in language instruction, as noted by the author, are three efforts to improve instruction: use of standards, application of research, and assessment for accountability.

The chapter *Specialized Innovations for Students With Disabilities*, by Joseph Boyle, explores the challenges of not only providing access to the general education curriculum for students with disabilities but also of engaging these students as active participants in mastering the Common Core State Standards. He surveys methodological and technological innovations in instructional strategies for literacy, mathematics, and science in special education. Sam Redding’s chapter, *Getting Personal: The Promise of Personalized Learning*, defines personalized

learning and includes classroom examples of how his theory of personalized learning would play out in different scenarios. Redding provides an historical overview, framing the concept as an inroad to the acquisition of 21st-century skills.

Part Three, *Technology in Learning Innovation*, includes chapters on the relationship between learning and the technology that is becoming more and more a part of the education landscape. In the chapter *Education + Technology + Innovation = Learning?* by Joe Layng and Janet Twyman, we learn of the continuing disjunction between technological advances and unchanging instructional methods. The authors describe the landscape of “current, mainstream K–12 hardware and software,” showing how we can use technology to improve student learning.

Catherine Schifter looks at the learning potential in gaming as a driver of education in *Games in Learning, Design, and Motivation*. Schifter provides an overview of the nature and variety of games and how the skills and motivation intrinsic to gameplaying can be used to cultivate desirable learning skills. Next, Herbert Walberg and Janet Twyman discuss the history of distance learning in their chapter *Advances in Online Learning*. The chapter overviews a selection of popular distance learning programs and platforms, including the rapidly expanding application of MOOCs, that is, massive, open, online classes.

Ryan Baker’s *Learning, Schooling, and Data Analytics* concludes Part Three by examining the emerging fields of learning analytics (LA) and educational data mining (EDM), areas showing promise in establishing a better understanding of the factors contributing to learning, including social motivation. Baker considers the historic context of these emerging fields and provides a wealth of action principles to guide the use of data to improve practice.

In Part Four, *Reports From the Field: Innovation in Practice*, three authors report on their experiences using various innovative strategies in practice. A chapter on innovation at work is provided by Lisa Kinnaman in her description of Idaho Leads, an effort to build leadership capacity across the state, including regional and local communities, districts, and schools. This capacity-building effort embraced innovative leadership-building activities and technologies. *Idaho Leads: Applying Learning In and Out of the Classroom to Systems Reform* includes vignettes of seven “studio districts” identified as project exemplars.

Amanda VanDerHeyden’s chapter on *Using Response to Intervention Data to Advance Learning Outcomes* examines a system of service delivery that includes adjustments for students who have not been successful learners. VanDerHeyden suggests a systematic process to guide the reader in using data to make informed instructional decisions. Mark Williams’s chapter *Innovation in Career and Technical Education Methodology* looks at the potential rethinking of the high school curriculum to encompass the best aspects of academic and vocational learning to better prepare today’s students for success in college and careers.

The author traces the history of vocational education as a lens for examining potential for today's educational marketplace, with the goal of education being more than a pipeline for employment.

We have included a *Glossary* of terms found throughout these essays. The authors of the chapters in this volume have examined innovation in effective practice with an eye to what it means for state and local educational systems and how innovation can become standard practice. The Center on Innovations in Learning will continue to supplement this work and seek innovations that will help inform the field in their efforts to improve schools and schooling for the students we are charged to serve.

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