

# Implementation Research in Communication Sciences and Disorders



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# Implementation Research in Communication Sciences and Disorders

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# Implementation Research in Communication Sciences and Disorders

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## Series Preface

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The purpose of the *Communication and Language Intervention Series* is to provide meaningful foundations for the application of sound intervention designs to enhance the development of communication skills across the life span. We are endeavoring to achieve this purpose by providing readers with presentations of state-of-the-art theory, research, and practice.

In selecting topics, editors, and authors, we are not attempting to limit the contents of this series to viewpoints with which we agree or that we find most promising. We are assisted in our efforts to develop the series by an editorial advisory board consisting of prominent scholars representative of the range of issues and perspectives to be incorporated in the series.

Well-conceived theory and research on development and intervention are vitally important for researchers, educators, and clinicians committed to the development of optimal approaches to communication and language intervention. Demonstrations of what may work in intervention should lead to analysis of promising discoveries and insights from developmental work that may in turn fuel further refinement by intervention researchers. We trust that the careful reader will find much that is of great value in this volume.

An inherent goal of this series is to enhance the long-term development of the field by systematically furthering the dissemination of theoretically and empirically based scholarship and research. We promise the reader an opportunity to participate in the development of this field through debates and discussions that occur throughout the pages of the *Communication and Language Intervention Series*.

# Editorial Advisory Board

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Lesley Olswang is Professor Emerita in the Department of Speech and Hearing Sciences at the University of Washington in Seattle, where she spent her 38-year academic career. She received her B.S. degree from Northwestern University, her M.S. degree from the University of Illinois, and her Ph.D. degree from the University of Washington, all in communication sciences and disorders (CSD) with an emphasis on speech-language pathology. Dr. Olswang holds her Certificate of Clinical Competence from the American Speech-Language-Hearing Association (ASHA) in speech-language pathology. She was made a Fellow of ASHA in 1996 and received the Honors of the Association in 2016.

The overarching theme of Dr. Olswang's research has been to understand the nature of communication disorders in young children so that interventions can be devised to optimally facilitate change. She has extensive clinical and research experience with children from 7 months through school-age, but most of her work has addressed communication development and disorders of children younger than 3 years of age. Her research with this age group has focused on two specific populations: young nonverbal children with significant disabilities, and toddlers diagnosed with specific language impairment. She has been investigating the efficacy of treatments with these children and their families, particularly attempting to determine readiness factors that will inform intervention planning. These research programs have moved from feasibility studies to randomized control trials using mixed methodologies and have been supported by the University of Washington, the U.S. Department of Education, and the National Institutes of Health. In service of these research interests, she was Chair for the Conference on Treatment Efficacy, sponsored by the American Speech-Language-Hearing Foundation (ASHF) in 1989. In 2011, she attended the first Global Implementation Science Conference in Washington, D.C. This seminal experience shifted her thinking about clinical research, offering a paradigm for considering efficacy research from the broader perspective of merging research evidence and practice. As a trustee on the Board of ASHF between 2012 and 2018, she participated in the launching of the Summit on Implementation Science in Communication Sciences and Disorders in 2014. She also served as Chair of ASHF's Program committee, which was responsible for creating the Researcher-Practitioner Collaboration Grant Award to support implementation research in CSD. Since 2014, she has continued her work with young nonverbal children with significant disabilities, including being funded by the University of Washington, Institute of Translational Health Sciences to address several implementation questions. Most recently, she has participated in dissemination research as part of her research

program. She has given numerous presentations on implementation science in CSD and has authored nine implementation and dissemination research articles.

**Julie L. Feuerstein, Ph.D.**, assistant professor in the School of Communication Sciences and Disorders at the University of Central Florida

Julie Feuerstein is an assistant professor in the School of Communication Sciences and Disorders at the University of Central Florida. She obtained her B.S. and M.S. degrees in communication disorders and speech-language pathology, respectively, at Boston University and her Ph.D. in speech and hearing sciences at the University of Washington in Seattle. She completed postdoctoral training in the Department of Psychiatry and Behavioral Sciences at the Johns Hopkins School of Medicine, with an appointment to Kennedy Krieger Institute's Center for Autism and Related Disorders. Dr. Feuerstein's teaching and research interests center around evaluating prelinguistic intervention for young children with complex communication needs (CCN) and examining effective strategies for integrating research evidence with clinical practice to better support these children and their families. Currently, she is the Director of the Early Communication and Play (ECAP) lab at the University of Central Florida.

Dr. Feuerstein's research has been funded by the American Speech-Language-Hearing Foundation, the Bailes Family Foundation, the Irma & Orville Parker Charitable Trust, and the Margaret & R. Parks Williams Charitable Foundation. She has published in peer-reviewed journals and presented her research at local, national, and international conferences. Dr. Feuerstein's work is dedicated to advancing clinical care and research that empowers young children with CCN and their families through meaningful access, participation, and engagement in all aspects of life. By collaborating with families, clinicians, and communities, Dr. Feuerstein aims to enhance communication outcomes, support inclusion, and improve the overall quality of life for these children, fostering environments where every child can thrive.

**Natalie F. Douglas, Ph.D.**, associate professor in the Department of Communicative Disorders at the University of Louisiana at Lafayette

Natalie Douglas is an associate professor in the Department of Communicative Disorders at the University of Louisiana at Lafayette, where she holds the Doris Hawthorne/Louisiana Education Quality Regents Support Fund Professorship IV. She earned her Ph.D. in neurocommunicative sciences with a focus on implementation research from the University of South Florida. Dr. Douglas's research centers on achieving meaningful, person-centered outcomes for individuals with aphasia, dementia, and other communication challenges. Her work focuses on partnering with clinicians to integrate evidence-based interventions into everyday clinical practice, particularly within long-term care settings.

Supported by grants from the National Institutes on Aging, the Learning Health Systems Rehabilitation Research Network, and the American Speech Language Hearing Foundation, Dr. Douglas leads projects that coach health care staff in

foundational communication strategies, enhancing care for people with acquired communication disorders and communication differences. These initiatives are designed to ensure individuals can sustain essential aspects of wellbeing, including safety, health care access, and social connectedness. Through her use of implementation research, Dr. Douglas ensures that communication interventions are sustainably incorporated into clinical workflows, resulting in lasting improvements in care practices. Her commitment to integrating research and practice continues to drive innovation and positively impact the field of speech-language pathology.

## About the Contributors

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**Crystle N. Alonzo, Ph.D., CCC-SLP**, is a certified speech-language pathologist and an assistant professor at San Diego State University. She directs the Comprehension Opportunities in Reading and Language (CORAL) Lab, whose work is centered on accessibility, feasibility, and sustainability of evidence-based clinical practices for young children with developmental language disorder and dyslexia. Dr. Alonzo is committed to reducing the research-to-practice gap in the field of communication sciences and disorders by using and promoting dissemination and implementation research frameworks.

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**Cathy Binger, Ph.D., CCC-SLP**, is a professor at the University of New Mexico who specializes in augmentative and alternative communication (AAC). She has been a speech-language pathologist for more than 30 years and has expertise in building functional communication skills with individuals who use AAC. Dr. Binger is an active researcher who develops and evaluates measures and intervention programs designed to enhance the language skills of children who use AAC. One of her passions is to infuse implementation science throughout the communication disorders discipline to enhance the applicability of clinical and educational innovations.

**Mindy S. Bridges, Ph.D.**, is a certified speech-language pathologist and an associate professor in the department of Hearing & Speech at the University of Kansas Medical Center. Her research interests include the connection between language and reading development and disorders, with a particular interest in developing and investigating the efficacy of language-based instruction and interventions.

**Laura S. Coco, Au.D., Ph.D.**, is an assistant professor at San Diego State University and Director of the Community Engaged Research for Communication Access (CERCA) Lab, focusing on hearing health care access and equity. She earned her audiology doctorate from the University of Texas and her Ph.D. from the University of Arizona, with postdoctoral training at Oregon Health & Science University and the

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**Kitty G. Edstrand, Ph.D., TSVI/COMS/ECSE**, has been serving in the field of visual impairment and blindness for almost 20 years. She is a licensed Teacher of Students with Visual Impairments and Certified Orientation and Mobility (O&M) Specialist. She's been in New Mexico for 8 years, where she continues to conduct research in and out of the classroom, support staff, and teach O&M courses for New Mexico State University.

**John J. Heilmann, Ph.D.**, is a professor in the School of Rehabilitation Sciences & Technology at the University of Wisconsin-Milwaukee. He completes research and development of language assessments to document children's functional language skills. He also completes implementation research to promote speech-language pathologists' adoption of best practices in school-based comprehensive evaluation. Central to all research efforts are partnerships to build capacity with practicing clinicians, discover best practices in implementation, and inform practices and policies.

**Tiffany P. Hogan, Ph.D., CCC-SLP**, is a professor in the Department of Communication Sciences and Disorders at Massachusetts General Hospital Institute of Health Professions in Boston; Director of the Speech and Language (SAiL) Literacy Lab and the Center for Translational Research: implementation science, and Dissemination for Equity (cTIDE); and research associate at Harvard Medical School. Dr. Hogan studies the genetic, neurologic, and behavioral links between oral and written language development, with a focus on improving assessment and intervention in schools, especially for neurodiverse children with developmental language disorder, dyslexia, and/or speech sound disorders.

**Jennifer Kent-Walsh, Ph.D., CCC-SLP, FLASHA Honoree, ASHA Fellow, NAP Fellow**, is Pegasus Professor of Communication Sciences and Disorders, Director of the FAAST Assistive Technology Demonstration Center & Augmentative and Alternative Communication (AAC) Lab, and Senior Associate Dean for Research & Faculty Excellence in the College of Health Professions and Sciences at the University of Central Florida. Dr. Kent-Walsh received her Bachelor of Education degree from McGill University (Montreal, QC), her Master of Science degree in Communication Disorders from Dalhousie University (Halifax, NS), and her Doctor of Philosophy in

Communication Sciences and Disorders from The Pennsylvania State University (University Park, PA). Along with her primary research collaborator, Cathy Binger, and their research team, Dr. Kent-Walsh concentrates her research efforts on developing and evaluating interventions designed to advance language and communication outcomes for children with developmental disabilities who use augmentative and alternative communication (AAC). This line of research involves direct communication intervention and language measurement work with children using AAC, as well as indirect interventions with the communication partners of these children, including parents, peers, and service-providers. This work has been widely published and supported by a variety of local, state, and federal funding agencies, including the National Institutes of Health (NIDCD).

**Rouzana Komesidou, Ph.D.**, is an implementation scientist, a consultant, and the founder of Mosinian Research & Consultancy, located in Cyprus. Her work focuses on using implementation science to improve educational and clinical services for children with communication disorders.

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# Preface

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Clinical researchers in the discipline of communication sciences and disorders (CSD) have been increasingly attracted to implementation science (IS) as a way to merge evidence and practice. The overarching goal of IS research for CSD is to increase the quality of evidence across settings where people seek CSD services and, in turn, improve outcomes for individuals with communication and related disorders. Clinical researchers have long known that merely conducting and publishing research does not optimally impact practice. Rather, a more active approach is needed—one that focuses on purposefully merging evidence and practice. During the past two decades, CSD researchers have partnered with practitioners to pursue improved outcomes via IS. They have relied on resources from a variety of disciplines to guide their efforts. The lack of a central IS reference pertinent to CSD has made this endeavor challenging. This book is intended as a first attempt to write such a reference. It borrows from IS principles and approaches to provide a relevant, practical guide for CSD clinical researchers who are interested in merging evidence with practice. As a first attempt, our objective is to provide a guide for how to plan and conduct implementation research. As such we have had to limit our topics (e.g., we do not discuss dissemination research) and often go into less depth than we might desire. The motivation for this book is to advance the science of CSD and thus expand clinical research with the goal of improving outcomes for the individuals we serve. This book will provide current and future investigators with practical information for understanding the structure and fundamental components of implementation research, as they relate to our discipline. For practitioners, the book will emphasize their expertise and illustrate how they are critical partners in research. Without meaningful collaboration between researchers and practitioners, implementation research will not be successful. Numerous examples and case studies from CSD will be presented to illustrate and apply the various concepts being introduced. Through practical examples, the complexities of research inspired by the discipline of IS will be clarified.

Although this book is designed to serve as a guide, it does not provide a detailed, step-by-step directive for conducting implementation research. Rather, it is meant to provide a strong foundation for considering implementation research and tools for getting started in planning and conducting this unique type of research. Details and elaborations of concepts presented in this book can be found in the many practical resources and tools, provided throughout the chapters and in the Appendixes. Further, this book is not meant as an IS tutorial. Readers with no or limited knowledge of IS are urged to read and obtain detailed information from one or more of the following foundational references: Brownson et al. (2023), Curran (2020), Fixsen et al. (2019), Nilsen (2024), and Weiner et al. (2023). Finally, we are not advocating that CSD researchers become IS researchers. Rather, we are viewing implementation research as a type of research that offers a perspective and scientific approach that CSD clinical investigators should consider.

Clinical researchers who are raising questions about how to improve services, how to encourage evidence-based and evidence-informed interventions, or how to ensure quality of care have at their disposal a wealth of knowledge and experience motivated by IS that can assist in CSD research endeavors. We argue that we are CSD researchers, borrowing from the expertise of another discipline. This book will serve as a guide for making optimum use of IS perspectives, principles, and approaches to expand CSD research focused on improving care for individuals with communication and related disorders.

This book is organized in four sections. Each section will be introduced by a philosophical statement authored by the book editors. This statement will emphasize the main themes to be covered in the section's respective chapters.

- **Section I** provides important background and an overview of key topics in implementation research, borrowing from the discipline of IS and addressing what implementation research might look like in CSD.
  - **Chapter 1** introduces implementation research in CSD, including discussing the importance of integrating evidence and practice, and considering innovations in IS over recent years.
  - **Chapter 2** delineates four pillars of implementation research: 1) cultivating partnerships, 2) recognizing the complexities of interventions and service settings, 3) engaging in an iterative process of discovery, and 4) ensuring rigorous, equitable, and appropriate methods to answer research questions. These pillars capture the essence of implementation research and are necessary for investigators to consider as they plan and conduct this type of research.
  - **Chapter 3** provides the broad contours of the implementation research process, including a suggested flowchart for decision making.
- **Section II** focuses on the implementation research process and its fundamental components. It contains four chapters, each written by a contributing author or authors.
  - **Chapter 4** describes how researchers can narrow their focus, considering where they are in their research program, where partners are in their practice, and finally, how to generate implementation research aims.
  - **Chapter 5** discusses implementation frameworks that capture contextual factors and how to select appropriate ones to address research questions.
  - **Chapter 6** explores implementation research approaches, including specific research designs.
  - **Chapter 7** discusses implementation strategies and outcomes.
- **Section III** includes two chapters addressing practicalities of conducting implementation research, each written by a contributing author or authors.
  - **Chapter 8** addresses practicalities related to funding implementation research, including tips for writing a grant proposal.

- [Chapter 9](#) considers the process of deciding whether to pursue implementation research, from a student's perspective and a faculty member's perspective.
- [Section IV](#) contains a reflection on what we have learned about implementation research over the years and where we might be headed in CSD written by the book's editors.
  - [Chapter 10](#) highlights aspirations for implementation research in CSD.

We hope this book helps you move forward on your journey of planning and conducting clinical research that is relevant to improving the services we provide to individuals with communication and related disorders. We believe increasing implementation research in CSD will enhance the impact of our discipline on both our science and our practice. Good luck in contributing to this impact!

L.B.O.  
J.L.F.  
N.F.D.

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# Foreword

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The heart of implementation research (IR) is collaboration. How do we get practitioners, clinicians, caregivers, agency administrators, and researchers (i.e., stakeholders) on the same page as we seek to enhance the communication abilities of our clients? We have different goals and priorities; different values and perspectives; and different jargon. We each have our own individual contexts, and circumstances faced daily in our homes, work, and community exercise considerable influence over our behavior. Although IR is couched in the realm of “research,” we are also promoting professional development within our discipline by tackling problems of practice. And in so doing, we should be advancing behavioral science—fluencing behavior of clients, a broad array of stakeholders, and our systems of care. This is an endeavor that challenges our ability to communicate, because of the diversity of humans involved. That is why IR is important and complex—not for the faint of heart—and the demands on communication needed to form true collaborations may take many stakeholders (especially researchers) outside of their comfort zones. This outstanding book introduces stakeholders across the discipline of communication sciences and disorders and beyond to *why and how to accomplish IR*.

Researchers and other stakeholders have different motivations to engage in IR. For example, the authors note the common claim of a practitioner: “I want to prove that what I do works.” But when put to the test, many of our clinical innovations fail to demonstrate efficacy. A better motivation could be: “I am really invested in figuring out how to make my clinical idea work in a truly meaningful way for clients exhibiting a significant communication problem.” This acknowledges *the longevity of our endeavors*. Too often researchers claim *prematurely* that they have identified an evidence-based practice worthy of IR. That often reflects a simplistic understanding of IR. It also illustrates the potential pitfalls in our tendency towards linear thinking, which has long perpetuated the research-to-practice pipeline (illustrated in [Figure 1.1](#)).

By infusing IR into our thinking, we can eschew that linear thought pattern. That is, we need to adopt something akin to the hybrid approach to IR. There are opportunities to combine innovation development and evaluation with IR. We need to consider how to establish long-term collaborations that can withstand a lengthy iterative process of developing, evaluating, and refining innovations that address problems of practice. Each team member offers a unique perspective, as the evolution of innovation is seen through different lenses. Such interpersonal relationship development takes time and persistence and is fraught with challenges to collaboration. For example, sustaining relationships may face turnover problems that require bringing new team members up to speed on a project that has taken months or years to evolve.

Perhaps we can shorten the diffusion of knowledge into practice by combining intervention and implementation development. Typically, clients provide data that address efficacy. But patterns of responding also can elucidate the need to rework

one's clinical protocol. For example, error patterns among clients may prompt a withdrawal of or an addition to the components of an innovation protocol, as clients breeze through parts of the instruction or when you find that progress stalls or slows down, respectively. Sustainability and scalability will relate to records of delivery. Is the innovation delivered consistently—daily? from one year to the next? If not, what factors have influenced sustainment (short-term and long term) and how can those barriers be overcome. The key is to have end-users (e.g., clinicians, supervisors, caregivers) in authentic clinical contexts implementing innovations with ongoing opportunities for observations and discussions about all the aspects of social validity (e.g., acceptability, appropriateness, ease of use, sustainability) in the context of a true collaborative partnership. By having end-users delivering and evaluating the treatment, they also provide insights into costs and benefits, given their perceptions of the time and effort involved in light of the efficiency or meaningfulness of the improvements in communication skills.

IR depends not only on existing practices, but also on innovation development. This volume presents lots of ways to apply IR while developing innovations. We need to avoid the linear thinking trap. Combining innovation development and implementation development together may sound complicated, but the benefits are numerous. What a great way to grow your perspectives, your research skills, your interpersonal relationship skills! The beneficiaries are clients, providers, systems of care, and you. It takes humility, persistence, and good communication skills to engage in creative collaborative brainstorming. The infusion of IR into our way of thinking about clinical research may present challenges but also is likely to be fun and rewarding. The authors of this book provide convincing arguments and compelling examples testifying to the advantages of adding principles of IR to your clinical and scientific toolboxes. Like me, I hope you find this book thought-provoking, and useful for your future endeavors.

*Howard Goldstein, Ph.D.*

# Foreword

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In spite of remarkable advances in treatment research, access to high quality care remains a formidable challenge for most people. Recent data indicate that treatment breakthroughs take a decade and a half to reach routine care and only half of Americans receive evidence-based care (Kahn, Chambers, and Nita, 2021). *Knowing what to do does not ensure doing what we know* (Proctor and Geng, 2021).

This unfortunate state includes the field of Communication Sciences and Disorders. Over three decades, communication disorder researchers have made significant advances in understanding the biology of communication and disease mechanisms and, importantly, have developed a growing supply of effective, evidence-based treatments. Yet most of the 40+ million Americans with deafness and communication disorders do not yet reap the benefits of those discoveries. Accordingly, the National Institute on Deafness and Other Communication Disorders (NIDCD) has prioritized dissemination and implementation research in its most recent strategic plan and in a recent Director's Seminar.

Dissemination and implementation (D&I) science offers tools to reduce the quality gap and to increase the speed of delivering better care. Over the past twenty years, the field of D&I has grown, matured, and spread to a variety of health disciplines. Seminal books, focused journals, and national meetings have sparked advances in frameworks, strategies, specification of outcomes and outcome measurement, and research designs capable of both practical use in the real world and capturing the complexities of implementation processes and contexts. The now vast literature in D&I offers principles, examples, and strategies for ensuring meaningful partnerships between researchers, providers, and policy makers. The field's explicit foci have evolved from documenting barriers and care gaps, to testing strategies and examining how successful implementation of proven innovations contributes to more effective, efficient, equitable, and patient-prioritized outcomes.

Now in its third decade, D&I science faces many challenges. These include four already prioritized in the field's dominant literature: tackling the still-too-slow pace of change (Proctor et al., 2022), demonstrating the field's value for health systems, policy makers, and payers (Proctor, Bunger, Lengnick-Hall, et al, 2023); showing how implementing evidence-based care can help reduce inequities Gustafson et al, 2023); and capturing the nuances of change mechanisms (Geng, Powell, Goss, et al, 2025).

Other challenges remain, two of which this book excels at addressing: extending the reach of D&I science to essential fields of healthcare, and making D&I science more accessible to researchers and their partners.

In its earliest years, D&I science advanced primarily in the fields of mental health, cancer, and substance disorder, due in large part to the strong D&I leadership in NIMH, NCI, and NIDA. Cardiac and digestive/kidney disease have seen more recent advances. Communication disorder science (CDS)—affecting one in

six Americans—is a field ripe for significant advances. The editors note that clinical researchers in CDS, along with producing evidence-based and evidence-informed innovations, seek better ways to improve outcomes by harnessing implementation science methods and discoveries. This book offers a clear path to integrating CDS and implementation science, illustrated with specific case examples and forecasting how implementation research might improve outcomes for the one-in-six Americans with communication disorders.

A second success of this book is making the field of implementation science more accessible. Changing health care delivery is complex, and so is the science of change. As it has become better able to describe and guide the challenges of provider and system change, the D&I literature itself has become more challenging—especially for newcomers to the field and to essential partners who are not researchers. Practitioners will appreciate the book’s illustrations of their potential to partner with researchers, particularly those seeking to close the gap between the care that is and the care that could be, if all received evidence-based services. Chapters in this book offer concrete guidance for planning and conducting implementation research, identifying priority questions for research, narrowing the focus of studies, and identifying funding opportunities. In short, the book should make partnering with experienced implementation researchers and moving into D&I research as an investigator less daunting than it often seems.

The book seeks to improve communication disorder researchers’ ability to launch and complete research to improve services, namely through applying principles and methods of implementation science. However it also provides important contributions to implementation science. Implementation science has long recognized that it is a “team sport,” dependent upon strong partnerships to ensure its relevance. The elevation of partnerships as a key pillar of implementation research and this book’s practical steps to establishing and nurturing partnerships will be helpful to even the most seasoned implementation researchers.

The future of dissemination and implementation science is bright, even as it tackles more challenging questions. Training programs are equipping new scholars in a growing number of fields to move the science forward. D&I science is essential for improving individual, community, and population health and for ensuring a return on this nation’s investment in science. I wager that no one wants to deliver, receive, or pay for poor quality care. The field is all about delivering excellent health care for all. Similarly, in this time when efficiency is prioritized, implementation science can help reduce inefficient, substandard, and harmful care (McKay, Walsh-Bailey, Malone et al, 2023). Implementation science—with strong community and consumer partnerships and growing evidence of real-world benefit—may be uniquely poised to demonstrate the value of science in ways that people care about.

*Enola K. Proctor, Ph.D.*

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This book would not exist without the dedication of our colleagues and chapter co-authors for their significant contributions. Their knowledge of clinical research, IS, and the discipline of communication sciences and disorders (CSD) made this book possible. Most important, we acknowledge their dedication to providing evidence to support services for individuals with communication and related disorders. We thank you so much for your time and effort in working with us.

This book reflects two of the pillars of implementation research: cultivating partnerships and engaging in the iterative process of discovery. Throughout the last 2 years, we have had the pleasure of being true partners on this writing journey. We have debated hard topics, wrestled and cajoled each other into decisions, and harnessed our passion for promoting implementation research in CSD. This journey has been nothing but iterative. Without this shared vision and commitment, we would never have started—or finished—this project. And along with us have been our families, mentors, and community partners; we express our gratitude and love to them for their ongoing support.

# I

## Why Are We Here?

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## SECTION I PHILOSOPHICAL STATEMENT

### Why Are We Here?

Natalie F. Douglas

Last week, I facilitated a workshop for speech-language pathologists (SLPs) eager to implement evidence-based practices in their settings. One SLP shared that her eighth-grade students were interacting with augmentative and alternative communication (AAC) for the first time, despite needing it since preschool. Yesterday, my doctoral student informed me of her move to a new skilled nursing facility (SNF) where 400 residents had gone without speech-language pathology services for 2 years. Just a minute ago, an anonymous post in an SLP Facebook group I belong to read:

*Hi everyone, I finished my CF [clinical fellowship] in a SNF a few weeks ago and have applied for licensure. I had horrible supervision and poor clinical support. I feel that this experience has set me back clinically, and I almost feel like I need to redo my CF year or switch professions. Has anyone experienced this? I feel hopeless....*

These three examples highlight the urgent needs of people with communication and related disorders and underscore that we must do better. We invite you to adopt a both/and, expansive view rather than an “us-versus-them” mindset. For instance, we face urgent needs in our profession, and scientists, clinicians, and educators have worked tirelessly to uphold communication as a human right. We have a rich history of scientific contributions in communication sciences and disorders (CSD), and that science is not reaching those who need it quickly enough. The traditional research pipeline has saved countless lives with pharmaceutical interventions, and it has limited clinical researchers studying nonpharmacological innovations in complex contexts.

We humbly present this book to build on the critical work done before us and offer something new. [Chapter 1](#) introduces implementation research in CSD, emphasizing the integration of evidence and practice to optimize care. The chapter outlines the historical evolution of implementation science, its challenges, and its impact on closing the research-practice gap. [Chapter 2](#) discusses the four pillars of implementation research: cultivating partnerships; addressing complexities of interventions and service settings; engaging in iterative discovery processes; and ensuring rigorous, equitable methods. These pillars are essential for planning and conducting effective implementation research. [Chapter 3](#) focuses on the implementation research process, offering a structured approach to planning, forming research questions, and determining appropriate methods. It emphasizes understanding contextual factors and adapting research designs to real-world settings.

We hope you find this book a valuable resource on your journey. Our goal is to provide you with the tools and knowledge to navigate the complexities

of implementation research. By embracing the principles and methodologies discussed, you will be better prepared to collaborate effectively, address real-world challenges, and ultimately enhance the quality of care for individuals with communication and related disorders. We invite you to engage deeply with the content, apply the insights to your practice, and join us in advancing the field of CSD.

FOR MORE go to [bpub.fyi/olswang](http://bpub.fyi/olswang)

# 1

## Introduction

### *Implementation Research in Communication Sciences and Disorders*

Lesley B. Olswang, Julie L. Feuerstein, and Natalie F. Douglas

#### **VALUE OF MERGING EVIDENCE AND PRACTICE**

This book is based on the premise that merging evidence and practice has value for optimizing the care for individuals with communication and related disorders. Notably, research evidence contributes to 1) clinical accountability and legitimacy, 2) the knowledge base in the discipline, 3) ethical considerations, and 4) presumably the effectiveness and efficiency of services to individuals with communication and related disorders (Epstein, 2009). The desire to enhance practice through research and evidence is robust, coming from researchers, practitioners, administrators, policy makers, and perhaps most of all, individuals with communication and related disorders. The fusion of knowledge and practice is vital for providing accessible, meaningful, and effective services.

#### **EVIDENCE IN COMMUNICATION SCIENCES AND DISORDERS**

The discipline of communication sciences and disorders (CSD) has accumulated a large body of basic and clinical knowledge since its inception. This body of work has contributed to understanding and helping to serve individuals with a variety of communication and related disorders. Through strong research programs and talented practitioners, assessments and interventions (hereafter called innovations) have been supported through two kinds of evidence: evidence-based and evidence-informed. Notably, the American Speech-Language-Hearing Association (ASHA) has endorsed both kinds of evidence

**Table 1.1.** Evidence terminology.

Evidence terminology	
Evidence-based innovations	Innovation shown to be efficacious through multiple high-quality empirical studies with manualized protocols and tested ideally via randomized controlled trials (gold standard).
Evidence-informed innovations	Innovations based on accrued research supporting theoretical constructs regarding diagnosis and etiology (e.g., developmental neurological, sensory, motor theory), assessment (e.g., standardized and dynamic tools), and treatment strategies (e.g., behavioral approaches), although not necessarily manualized or researched via the gold standard.
Evidence-based practice (ASHA)	An approach to practice in which “current, high-quality research evidence (external evidence) is integrated with practitioner expertise and client preferences and values into the process of making clinical decisions” (ASHA, 2005).

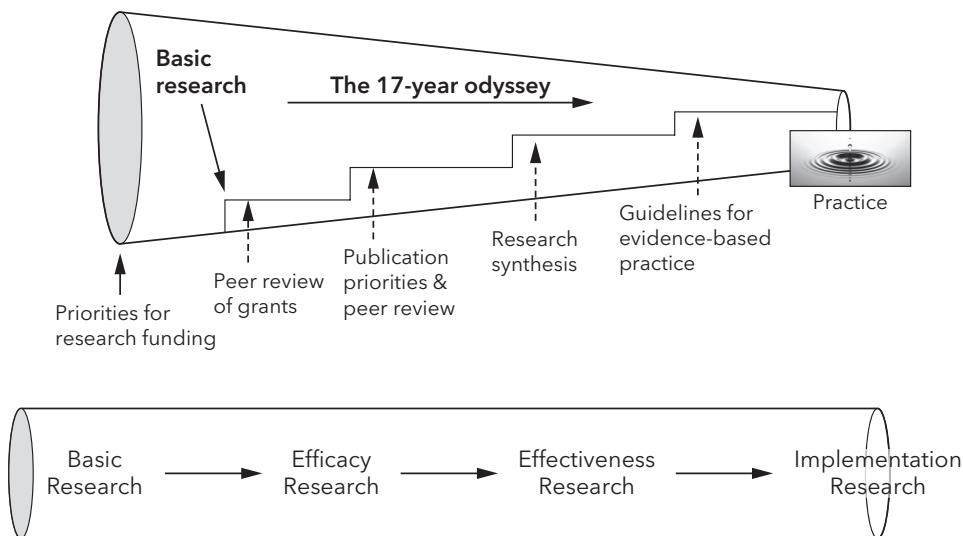
The term innovation is used throughout the book and refers to the array of procedures used in assessing and treating individuals with communication and related disorders.

as they promote evidence-based practice. (See [Table 1.1](#) for brief definitions of these key terms.) The term innovation is used throughout the book and refers to the array of procedures used in assessing and treating individuals with communication and related disorders.

Evidence-based innovations are the product of years of research consisting of multiple high-quality empirical studies, ideally using randomized controlled trials and manualized protocols, to demonstrate efficacy and sometimes effectiveness. This research most often originates with researchers in their laboratories conducting controlled experiments. This approach to evidence has followed the conventional research pipeline (Green, 2008), which is often referred to as the “gold standard” for documenting efficacy. [Figure 1.1](#) illustrates the traditional research pipeline (Green, 2008) and corresponding types of research (Robey, 2004). Green’s pipeline captures the timeline that is typically required moving from basic research, driven by priorities in research funding, through years of modification and testing to reach practice. Robey (2004) attempted to over-

lay the conventional types of research corresponding to the pipeline: basic, efficacy, effectiveness, and finally implementation. Evidence-based innovations would be those that have been investigated along this traditional pipeline.

Evidence-informed innovations are a product of an accumulation of research generated by CSD investigators and other scientists who have documented theoretical constructs regarding diagnosis and etiology of communication disorders (e.g., developmental, neurological, sensory, motor theory) and behavioral treatment strategies (e.g., ABC [antecedent, behavior, consequence] paradigm). Evidence-informed innovations are based on the needs of practice and are built on the logic of accrued research and



**Figure 1.1.** Traditional research pipeline (adapted from Green, 2008) and corresponding types of research.

available external evidence. Typically, these innovations are not manualized, and as such, they have not been examined via the gold standard for efficacy research. However, some evidence-informed innovations, or their corresponding components, have been the subject of research. For the most part, documenting the benefits of these innovations has been accomplished via internal data, either quantitative (e.g., percent accuracy) and/or qualitative (e.g., client and family report).

Both evidence-based and evidence-informed innovations demonstrate validity, most notably construct, content, and face validity, with some demonstrating predictive validity. Both types of evidence contribute to accountability in clinical application. As such, these evidence-supported innovations are recommended for use in practice, as attested to in classic CSD treatment texts (see, e.g., Hegde & Kuyumjian, 2020; Paul & Simmons, 2021; Roth & Worthington, 2021). Further, both types of innovations comply with ASHA's position statement regarding evidence-based practice (EBP), defined as "an approach in which current, high-quality research evidence is integrated with practitioner expertise and client preferences and values into the process of making clinical decisions" (ASHA, 2005). This rich collection of research evidence and innovations has been amassed over the years. However, even with targeted efforts by individual researchers and ASHA, there remains a gap between what we know and what we do. This is due to several factors, but two primary challenges stand out. First, innovations created under controlled laboratory conditions do not easily transfer to the realities of practice. Second, the burden for translating evidence to practice is almost exclusively laid on practitioners. They are charged with reading and interpreting journal articles and attending conferences and workshops, all while working in organizational systems that might not be eager to embrace or support the adoption of innovations.

Researchers and practitioners agree that keeping practice aligned with evidence requires a different approach. The traditional research pipeline has contributed importantly to CSD, but it has its limitations.

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The traditional research pipeline has contributed importantly to CSD, but it has its limitations.

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## IMPLEMENTATION SCIENCE

Approximately 20 years ago, the discipline of implementation science (IS) was born out of a desire for patients to routinely receive care that matched high-quality research evidence. The emphasis was on investigating ways to better translate research knowledge into practice; thus, the phrase “closing the research–practice gap.” IS has led the way in examining how to best translate what science has produced into usable, accessible, standard practice. The classic definition for IS has been

“the scientific study of methods (strategies) to promote the systematic uptake of research findings and other evidence-based practices to improve the quality of service delivery in routine care” (Powell et al., 2012, p. 124). Originally, the traditional pipeline was followed, where efficacy and effectiveness evidence were first gathered, and then research began to examine how to best implement these evidence-based innovations into practice. This was the dominant paradigm in IS for numerous years (Harvey et al., 2023).

Over the last two decades, IS has matured and changed in thoughtful ways (Brownson et al., 2023). The promises and pitfalls of conducting this type of research have become increasingly apparent (Beidas et al., 2022, 2023; Chambers & Emmons, 2024). The dominant paradigm envisioned a gradual closing of the research–practice gap, but that has not been the case (Harvey et al., 2023). Over the past two decades, implementation scientists have observed the strengths and weaknesses of their original questions and approaches. “Although initially conceptualized as a rational, linear process underpinned by traditional biomedical approaches to research translation, the complex, iterative and context-dependent nature of implementation is now well recognized” (Harvey et al., 2023, p. 2). As Beidas and colleagues note (Beidas et al., 2022; Harvey et al., 2023), the research–practice gap remains formidable. Decades of research have shown that many implementation strategies have not been able to accomplish adoption or sustainment of evidence-based innovations into standard practice. Importantly, researchers have come to better appreciate the significance of contextual factors shaping practice; that is “any feature of the circumstances in which an intervention is implemented that may interact with the intervention or produce variation in outcomes” (Harvey et al., 2023, p. 2). Researchers have learned that embracing context requires a deep appreciation of practice settings, from the clients themselves to practitioners and regulatory agencies. That understanding is dependent upon better joining researchers and community partners throughout the research process, from planning, to conducting, to analyzing and interpreting, and finally to disseminating results. Collaborations are integral to success for increasing

Part of the highly respected *Communication and Language Intervention Series*, this foundational reference is the first to address the critical topic of implementation research for researchers and clinicians in Communication Sciences and Disorders. More than a dozen thought leaders come together to address and demystify planning and conducting meaningful research in authentic contexts. Readers will:

- Understand the vital role implementation research plays in optimizing care for individuals across the lifespan.
- Learn about four essential pillars for planning and conducting effective implementation research.
- Advance meaningful collaboration between researchers and practitioners.
- Dig into the “how” of implementation research, including choosing a focus, formulating research questions, selecting frameworks and research designs, and measuring outcomes that matter.
- Get a candid, in-depth exploration of the unique opportunities and challenges that implementation research presents; and
- Explore key themes for planning future implementation research.

A trailblazing text for current and future researchers and practitioners at all career stages, this book will help the discipline merge evidence with practice and improve quality of life for people with communication disorders.



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