

# Treatment Resource Manual

for Speech-Language Pathology

Sixth Edition

Froma P. Roth, PhD  
Colleen K. Worthington, MS





5521 Ruffin Road  
San Diego, CA 92123

e-mail: [information@pluralpublishing.com](mailto:information@pluralpublishing.com)  
Website: <https://www.pluralpublishing.com>

Copyright © 2021 by Plural Publishing, Inc.

Typeset in 11.5/14 Adobe Caslon by Flanagan's Publishing Services, Inc.  
Printed in Canada by Friesens Corporation

All rights, including that of translation, reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, recording, or otherwise, including photocopying, recording, taping, Web distribution, or information storage and retrieval systems without the prior written consent of the publisher.

For permission to use material from this text, contact us by  
Telephone: (866) 758-7251  
Fax: (888) 758-7255  
e-mail: [permissions@pluralpublishing.com](mailto:permissions@pluralpublishing.com)

*Every attempt has been made to contact the copyright holders for material originally printed in another source. If any have been inadvertently overlooked, the publishers will gladly make the necessary arrangements at the first opportunity.*

### Library of Congress Cataloging-in-Publication Data

Names: Roth, Froma P., author. | Worthington, Colleen K., author.

Title: Treatment resource manual for speech-language pathology / Froma P.

Roth, Colleen K. Worthington.

Description: Sixth edition. | San Diego, CA : Plural, [2021] | Includes bibliographical references and index.

Identifiers: LCCN 2019017785 | ISBN 9781635501186 (alk. paper) | ISBN 1635501180 (alk. paper)

Subjects: | MESH: Speech Therapy--methods | Language Therapy—methods | Communication Disorders—therapy

Classification: LCC RC423 | NLM WL 340.3 | DDC 616.85/5—dc23

LC record available at <https://lcn.loc.gov/2019017785>

## Dedication

*For **Ilana** and **Eli**, each unique and extraordinary, who continue to fill my life with light and infinite delight; and to **Graydn Robert** and **Harper Rose**, our newest and brightest lights.*

**FPR**



*For **Leigh-Anne**, the small miracle who will always be the heart of my heart.*

**CKW**



# Contents

<i>Case Examples by Disorder</i> .....	<i>xvi</i>
<i>List of Tables</i> .....	<i>xxviii</i>
<i>List of Forms and Figures</i> .....	<i>xx</i>
<i>Preface</i> .....	<i>xxii</i>
<i>Acknowledgments</i> .....	<i>xxv</i>
<i>About the Authors</i> .....	<i>xxvi</i>

## PART ONE Preparing for Effective Intervention

### CHAPTER 1

<b>The Essential Ingredients of Good Therapy: Basic Skills</b> .....	<b>3</b>
Philosophy.....	3
Universal Design Principles for Learning: An Overarching Framework.....	4
General Principles of Intervention.....	4
Programming.....	6
Selection of Therapy Targets.....	6
Sequencing of Therapy Targets.....	9
Generalization/Carryover.....	11
Termination of Therapy.....	11
Formulation of Behavioral Objectives.....	11
Theories of Learning.....	15
Innateness Theory/Biological Model.....	15
Behavioral Model.....	15
Constructivism/Interactionist/Integrative Model.....	16
Behavior Modification.....	17
Types of Reinforcement.....	17
Positive Behavioral Interventions and Supports.....	20
Schedules of Reinforcement.....	21
Key Teaching/Scaffolding Strategies.....	22
Homework.....	24

Session Design .....	24
Basic Training Protocol .....	24
Task Order .....	25
Dynamics of Therapy .....	26
Group Therapy .....	28
Data Collection .....	31
Recording Session Data .....	31
Probes .....	32
Collaborative Service Delivery Models .....	32
Multitiered Systems of Support/Response to Intervention .....	34
Current Challenges of RTI .....	35
Treatment Efficacy/Evidence-Based Practice .....	37
Treatment Intensity and Dosage .....	38
Setting-Specific Professional Terminology .....	39
Troubleshooting Tips for Therapy Sessions .....	41
Conclusion .....	42
Additional Resources .....	42
Appendix 1–A: Therapy Observation Checklist .....	44
Appendix 1–B: Worksheet for Identifying Behavioral Objectives .....	45
Appendix 1–C: Worksheet for Formulating and Writing Behavioral Objectives .....	47
Appendix 1–D: Sample Daily Therapy Plan .....	49
Appendix 1–E: Daily Therapy Plan .....	51
Appendix 1–F: Report of Observation Hours .....	53
Appendix 1–G: Instructions for Using Data Recording Forms .....	54
Appendix 1–H: Sample Positive Behavioral Intervention and Support Plan .....	65

## CHAPTER 2

---

<b>Information Reporting Systems and Techniques .....</b>	<b>67</b>
Philosophy .....	67
Technical Writing Style .....	67
Report Formats .....	68
Initial Therapy Plan .....	69
Session Notes .....	72
Progress and Final Reports .....	73
Tips for Proofreading Clinical Reports .....	76
Individualized Education Program .....	77
Due Process .....	78
Individualized Family Service Plan .....	79
504 Plan .....	79
Professional Correspondence .....	80

Health Insurance Portability and Accountability Act.....	80
Additional Resources.....	90
Appendix 2–A: Sample Initial Therapy Plan.....	91
Appendix 2–B: Sample Progress Report.....	95
Appendix 2–C: Health Insurance Portability and Accountability Act (HIPAA).....	100

## **PART TWO Providing Treatment for Communication Disorders**

### **CHAPTER 3**

<b>Intervention for Articulation and Phonology in Children.....</b>	<b>105</b>
Treatment Approaches.....	105
Traditional.....	105
Motor-Kinesthetic.....	106
Distinctive Features.....	106
Paired Oppositions—Minimal and Maximal.....	108
Phonological Processes.....	109
Cycles Approach.....	109
Core Vocabulary.....	109
Metaphon.....	111
Oral-Motor Considerations.....	111
Treatment Efficacy and Evidence-Based Practice.....	111
Target Selection for Intervention Programming.....	112
Developmental.....	112
Nondevelopmental.....	114
Helpful Hints (Functional Articulation Disorders).....	121
Helpful Hints (Phonological Disorders).....	126
Organic Articulation Disorders.....	127
Cleft Palate.....	127
Helpful Hints.....	131
Hearing Impairment.....	131
Helpful Hints.....	137
Childhood Apraxia of Speech.....	137
Helpful Hints.....	142
Conclusion.....	143
Articulation and Phonology.....	143
Oral-Motor Dysfunction.....	143
Additional Resources.....	144
Articulation.....	144
Phonology.....	145
Appendix 3–A: Phonetic Placement Instructions for Difficult-to-Teach Sounds.....	146
Appendix 3–B: Diadochokinetic Rates for Children.....	149

## INTRODUCTION TO CHAPTERS 4 AND 5

---

<b>Introduction to Language Intervention for Children and Adolescents</b> . . . .	151
Classification of Language Disorders . . . . .	151
Relationship Between Oral Language and Literacy . . . . .	153
Role of the Speech-Language Pathologist in Literacy . . . . .	155
Theoretical Models of Intervention . . . . .	156
Treatment Efficacy/Evidence-Based Practice . . . . .	156

## CHAPTER 4

---

<b>Intervention for Language in Infants and Preschool Children</b> . . . . .	159
Intervention With Infants (Birth to 3 Years) . . . . .	159
ASHA Early Intervention Guidelines . . . . .	159
Prelinguistic and Early Language Therapy Targets . . . . .	160
Helpful Hints . . . . .	170
Intervention With Children (3 to 5 Years) . . . . .	171
Treatment Approaches for Infants, Toddlers, and Preschoolers . . . . .	177
Emergent Literacy Intervention (Birth Through Preschool Years) . . . . .	179
Helpful Hints . . . . .	186
Conclusion . . . . .	187
Additional Resources . . . . .	187
Appendix 4–A: Developmental Language Milestones: Birth to 5 Years . . . . .	191
Appendix 4–B: Gross and Fine Motor Developmental Milestones . . . . .	197
Appendix 4–C: Stages of Cognitive Development . . . . .	201
Appendix 4–D: Gesture Developmental Milestones: 9 to 16 Months . . . . .	203
Appendix 4–E: Development of Vision . . . . .	204
Appendix 4–F: Feeding Developmental Milestones . . . . .	206
Appendix 4–G: Stages of Play Development . . . . .	208
Appendix 4–H: Developmental Toy List . . . . .	209
Appendix 4–I: Examples of Lessons from “Promoting Awareness of Speech Sounds” (PASS) . . . . .	210

## CHAPTER 5

---

<b>Intervention for Language in School-Age Children Through Adolescence</b> . . . . .	225
Characteristics of Students Ages 5 to 10 Years . . . . .	225
Characteristics of Adolescents 10 to 18 Years . . . . .	228
Intervention Considerations for School-Age Children and Adolescents . . . . .	232



The Common Core State Standards .....	233
Treatment Approaches for School-Age Children and Adolescents .....	236
Instructional Strategies for Writing .....	238
Helpful Hints .....	263
Conclusion .....	265
Additional Resources .....	266
Appendix 5–A: Types of Cohesion .....	270

## CHAPTER 6

<b>Intervention for Autism Spectrum Disorder (ASD)</b> .....	271
Overview of Autism Spectrum Disorder .....	271
Incidence .....	272
Etiology .....	273
Characteristics of Children With ASD .....	274
Social Communication .....	274
Repetitive/Restricted Behaviors, Interests, and Activities .....	275
Language .....	275
Emergent Literacy and Literacy .....	276
Medications .....	278
Outcomes .....	279
Treatment Efficacy/Evidence-Based Practice .....	279
Treatment for Autism .....	280
Theoretical Models .....	280
Treatment Approaches .....	282
Helpful Hints .....	289
Conclusion .....	290
Additional Resources .....	291

## CHAPTER 7

<b>Intervention for Adult Aphasia With Introduction to Traumatic Brain Injury</b> .....	295
Aphasia .....	295
Classification of Aphasia Syndromes .....	295
Treatment Efficacy/Evidence-Based Practice .....	298
Treatment for Aphasia .....	300
Neuroplasticity .....	300
Theoretical Orientations to Aphasia Treatment .....	302
Guidelines for Programming and Implementing Therapy .....	303
Specific Intervention Procedures .....	306
Helpful Hints .....	320

Conclusion .....	321
Additional Resources .....	322
Traumatic Brain Injury .....	324
Communication .....	324
Executive Functioning .....	325
Attention and Memory .....	325
Behavior .....	325
Treatment Efficacy/Evidence-Based Practice .....	326
Treatment for Traumatic Brain Injury .....	327
Helpful Hints .....	328
Conclusion .....	328
Additional Resources .....	329
Appendix 7–A: Suggestions for Enhancing Verbal Interaction With a Family Member With Aphasia .....	330
Appendix 7–B: Guidelines for Conversational Coaching .....	331

## CHAPTER 8

---

<b>Intervention for Motor-Speech Disorders: The Dysarthrias, Apraxia of Speech, and Dysphagia</b> .....	333
Treatment for Motor-Speech Disorders .....	333
The Dysarthrias .....	334
Treatment Efficacy/Evidence-Based Practice .....	337
Treatment for the Dysarthrias .....	337
Helpful Hints .....	349
Apraxia of Speech .....	350
Treatment Efficacy/Evidence-Based Practice .....	352
Treatment for Apraxia of Speech .....	352
Helpful Hints .....	359
Conclusion .....	360
Additional Resources .....	360
Dysphagia .....	362
Treatment for Dysphagia .....	362
Helpful Hints .....	366
Conclusion .....	366
Additional Resources .....	367

## CHAPTER 9

---

<b>Intervention for Fluency</b> .....	369
Categories of Stuttering Behaviors .....	370
Core Behaviors .....	370

Secondary Behaviors .....	371
Developmental Disfluencies Versus Stuttering .....	371
Treatment for Fluency Disorders .....	372
Treatment Efficacy/Evidence-Based Practice .....	373
Intervention Techniques .....	374
Helpful Hints .....	380
Conclusion .....	392
Additional Resources .....	392
Appendix 9–A: Sample Phrases, Questions, and Monologues .....	394

## CHAPTER 10

<b>Intervention for Voice and Alaryngeal Speech .....</b>	<b>397</b>
Voice Disorders .....	397
Classification of Voice Disorders .....	399
Treatment Efficacy/Evidence-Based Practice .....	401
Treatment for Voice Disorders .....	402
Intervention Techniques .....	403
Transgender Voice .....	408
Helpful Hints .....	416
Alaryngeal Speech .....	417
Treatment for Alaryngeal Clients .....	418
Mechanical Devices .....	418
Esophageal Speech .....	419
Tracheoesophageal (TEP) Speech .....	422
Helpful Hints .....	425
Conclusion .....	426
Additional Resources .....	426
Appendix 10–A: Additional Dialogue Scripts for Voice Therapy Activities .....	429

## CHAPTER 11

<b>Client and Family Counseling .....</b>	<b>433</b>
Five Key Traits of an Effective Counselor .....	435
Stages of Counseling .....	436
Establishing the Therapeutic Relationship .....	436
Implementing Counseling Intervention .....	436
Terminating the Therapeutic Relationship .....	437
Client and Family Emotional Reactions to Communicative Disorders .....	437
Counseling Techniques for Communicative Disorders .....	439
Group Counseling .....	443

Family Systems Counseling .....	443
Helpful Hints .....	444
Conclusion .....	445
Additional Resources .....	445

## CHAPTER 12

---

<b>Multicultural Issues in Intervention .....</b>	<b>447</b>
Cultural Competence .....	448
Cultural/Ethnic Background .....	449
Socioeconomic Status (SES) .....	449
Linguistic Differences .....	450
Clinical Considerations for Children .....	451
Terminology .....	451
Patterns of Second Language Acquisition .....	455
Educational Models .....	456
Clinical Considerations for Adult Populations .....	461
Clinical Considerations for Multilingual Populations With Language Disorders .....	461
Helpful Hints .....	462
Conclusion .....	464
Additional Resources .....	464

## CHAPTER 13

---

<b>Contemporary Issues .....</b>	<b>465</b>
Critical Thinking .....	465
Components of Critical Thinking .....	465
Strategies/Techniques for Promoting Critical Thinking .....	466
Telepractice .....	469
Privacy and Regulatory Issues .....	469
Basic Clinician Competencies With Technology .....	470
Candidates for Telepractice Services .....	470
Simulation Technologies .....	471
Standardized Patients (SPs) .....	472
Computer-Based Learning Experiences (CBLEs) .....	472
Implementation .....	472
Coding and Reimbursement .....	473
CPT Codes .....	473
ICD-10 Codes .....	473
Documentation .....	473
Conclusion .....	474

APPENDIX A	<b>ASHA Code of Ethics</b> .....	477
APPENDIX B	<b>International Phonetic Alphabet Symbols</b> .....	485
APPENDIX C	<b>Glossary of Selected Medical Terms</b> .....	487
APPENDIX D	<b>Schematic of the Vocal Tract</b> .....	491
	<i>References</i> .....	493
	<i>Index</i> .....	527

# Case Examples by Disorder

Disorder	Example Profile	Selection of Therapy Targets	Sample Activities
Aphasia [Chapter 7]			
Profile 1: Fluent Aphasia—39-Year-Old	313	314	314, 315
Profile 2: Nonfluent Aphasia—63-Year-Old	315	315	315–318
Profile 3: Global Aphasia—71-Year-Old	318	318	319, 320
Apraxia of Speech [Chapter 8]			
Profile 4: Severe Apraxia—65-Year-Old	356	356	356, 357
Profile 5: Moderate Apraxia—58-Year-Old	358	358	358, 359
Articulation [Chapter 3]			
Profile 1: Functional Articulation—3-Year-Old	115	115, 116	116
Profile 2: Functional Articulation—6-Year-Old	117	117	117
Profile 3: Functional Articulation—8-Year-Old	119	119, 120	120, 121
Profile 4: Phonological—5-Year-Old	122	122	122–124
Profile 5: Phonological—5-Year-Old	124	125	125, 126
Profile 6: Cleft Palate—4-Year-Old	129	129	130, 131
Profile 7: Hearing Impairment—7-Year-Old	134	135	135–137
Profile 8: Childhood Apraxia of Speech—3-Year-Old	140	140, 141	141, 142
Autism Spectrum [Chapter 6]			
Profile 1: Mild Impairment—12-Year-Old	287	287	—
Profile 2: Severe Impairment—3-Year-Old	288	288	—
Profile 3: At Risk—18-Month-Old	288, 289	289	—
Dysarthria [Chapter 8]			
Profile 1: Flaccid—75-Year-Old	344	344	344, 345
Profile 2: Hypokinetic—58-Year-Old	345, 346	346	346, 347
Profile 3: Ataxic—45-Year-Old	347	347	347–349

Disorder	Example Profile	Selection of Therapy Targets	Sample Activities
Fluency [Chapter 9]			
Profile 1: Preschool—3-Year-Old	379	379	—
Profile 2: Preschool—3-Year-Old	382	382, 383	382, 383
Profile 3: School-Age—9-Year-Old	384	384, 385	384–386
Profile 4: Adult—29-Year-Old	386	386, 387	386–389
Language [Chapter 4]			
Profile 1: Early Intervention—18-Month-Old	169	—	—
Profile 2: Preschool—3-Year-Old	182	182	182–184
Profile 3: Preschool—5-Year-Old	184	184	184–186
Language [Chapter 5]			
Profile 1: School Age—5- to 10-Year-Old	239	240	240–245
Profile 2: School Age—5- to 10-Year-Old	245	245	245–249
Profile 3: Adolescent—10- to 18-Year-Old	249	249	249–256
Profile 4: Adolescent—10- to 18-Year-Old	256	256	256–263
Voice [Chapter 10]			
Profile 1: Child—8-Year-Old	410	410	410, 411
Profile 2: Adult—48-Year-Old	413	413	413, 414
Profile 3: Vocal Fold Paralysis—39-Year-Old	414, 415	414	414–416
Profile 4: Laryngectomy—62-Year-Old	422	423	423–425

# List of Tables

1-1.	Comparison of Behavioral Objective Hierarchies .....	14
1-2.	Guidelines for Effective Instructions .....	25
1-3.	Response to Intervention Tiers .....	36
1-4.	Evidence Rating Hierarchy.....	38
1-5.	Examples of Terminology .....	40
3-1.	Distinctive Feature Analysis Chart .....	107
3-2.	Place, Manner, and Voicing Chart for English Consonants.....	108
3-3.	Selected Developmental Phonological Processes.....	110
3-4.	Age of Acquisition of English Consonants.....	113
3-5.	Frequency of Consonant Occurrence in English.....	118
3-6.	Effects of Hearing Loss on Articulation Development .....	133
1-1.	Behavioral Characteristics Associated With Language Disorders.....	152
1-2.	Scope and Sequence for Phonological Awareness Intervention .....	154
4-1.	Stages of Vocal Development in Infancy .....	163
4-2.	Preverbal Communicative Intentions .....	164
4-3.	Communicative Intentions Expressed at the Single-Word Level.....	165
4-4.	Definitions of Tier 1, Tier 2, and Tier 3 Vocabulary Words.....	167
4-5.	Grammatical Classification of the First 50 Words Produced.....	167
4-6.	Expressive Vocabulary Growth .....	168
4-7.	Stages of Mean Length of Utterance (MLU) Development .....	171
4-8.	Two-Word Semantic Relations .....	172
4-9.	Brown's 14 Grammatical Morphemes: Order of Acquisition.....	172
4-10.	Auxiliary Verb Development .....	173
4-11.	Development of Negation.....	173
4-12.	Development of Question Forms .....	174
4-13.	Developmental Sequence of Sentence Comprehension.....	175
4-14.	Hallmarks of Literacy Development.....	176
4-15.	Developmental Stages of Early Spelling .....	177
5-1.	Definitions of Reading Processes and Stages of Reading Development.....	227
5-2.	Narrative and Expository Text Difference.....	228



<b>5-3.</b>	Expository Text Types and Characteristics .....	229
<b>5-4.</b>	Main Types of Complex Sentences .....	230
<b>5-5.</b>	Example of Increased Complexity of CCSS Across Grade Levels for the Domain of Reading–Literature.....	234
<b>5-6.</b>	Language-Mediated Study Skills for Older Students and Adolescents.....	261
<b>6-1.</b>	Levels of Severity for Autism Spectrum Disorder .....	272
<b>6-2.</b>	Examples of Different Types of Echolalia.....	277
<b>7-1.</b>	Terminology Related to Language Deficits in Aphasia .....	296
<b>7-2.</b>	Classification of Aphasia Syndromes .....	297
<b>7-3.</b>	Long-Term Functional Goals for Aphasia Therapy.....	304
<b>8-1.</b>	Cranial Nerves.....	334
<b>8-2.</b>	Classification of the Dysarthrias.....	335
<b>8-3.</b>	Normal Speaking Rates for Adults and Children.....	343
<b>8-4.</b>	Differential Characteristics of Apraxia and Dysarthria .....	351
<b>9-1.</b>	Progressive Relaxation Training .....	377
<b>10-1.</b>	Normal Fundamental Frequencies for Males and Females.....	398
<b>10-2.</b>	Organic and Functional Voice Problems .....	400
<b>10-3.</b>	Homework Guidelines for Esophageal Speakers .....	420
<b>12-1.</b>	Sounds from English Not Used in Other Languages.....	451
<b>12-2.</b>	Consonant Sound Production Characteristics of African American English (AAE).....	452
<b>12-3.</b>	Morphologic and Syntactic Characteristics of African American English (AAE).....	453
<b>12-4.</b>	Pragmatic Characteristics of African American English (AAE) .....	455
<b>12-5.</b>	Speech Sound Production Characteristics of Spanish-Influenced English (SIE) ...	456
<b>12-6.</b>	Morphologic and Syntactic Characteristics of Spanish-Influenced English (SIE).....	457
<b>12-7.</b>	Pragmatic Characteristics of Spanish-Influenced English (SIE).....	458
<b>12-8.</b>	Speech Sound Production Characteristics of Asian-Influenced English (AIE)....	458
<b>12-9.</b>	Morphologic and Syntactic Characteristics of Asian-Influenced English (AIE) ...	459
<b>12-10.</b>	Pragmatic Characteristics of Asian-Influenced English (AIE).....	460

# List of Forms and Figures

## List of Forms

<b>1-1.</b>	Therapy Observation Checklist.....	44
<b>1-2.</b>	Worksheet for Identifying Behavioral Objectives.....	45
<b>1-3.</b>	Worksheet for Formulating and Writing Behavioral Objectives.....	47
<b>1-4.</b>	Sample Daily Therapy Plan.....	49
<b>1-5.</b>	Daily Therapy Plan.....	51
<b>1-6.</b>	Report of Observation Hours.....	53
<b>1-7.</b>	Session Data Log.....	56
<b>1-8.</b>	Summary Data Log.....	57
<b>1-9.</b>	Summary Data Graph.....	58
<b>1-10.</b>	Response Data Form.....	59
<b>1-11.</b>	Response Rating Scale.....	60
<b>1-12.</b>	Articulation Data Sheet.....	61
<b>1-13.</b>	Individual/Group Quick Tally Sheet.....	62
<b>1-14.</b>	Group Therapy Data Sheet.....	63
<b>1-15.</b>	Emergent Literacy Data Form.....	64
<b>1-16.</b>	Sample Positive Behavioral Intervention and Support Plan.....	65
<b>2-1.</b>	Sample Notice of Privacy Practices.....	82
<b>2-2.</b>	Sample Acknowledgment of Privacy Practices Notice.....	83
<b>2-3.</b>	Authorization for Release of Information From Another Agency or Physician.....	84
<b>2-4.</b>	Authorization for Release of Information to Another Agency or Physician.....	85
<b>2-5.</b>	Referral Letter Format.....	86
<b>2-6.</b>	Sample Referral Letter.....	87
<b>2-7.</b>	Acknowledgment of Referral Format.....	88
<b>2-8.</b>	Sample Referral Acknowledgment.....	89
<b>9-1.</b>	Home Fluency Observation Chart.....	381
<b>9-2.</b>	Stuttering Attitude Checklist.....	391
<b>10-1.</b>	Vocal Abuse Chart.....	412
<b>11-1.</b>	Client Nonverbal and Vocal Behavior Checklist.....	441
<b>11-2.</b>	Clinician/Counselor Behavior Checklist.....	442

## List of Figures

<b>1-1.</b>	Continuum of Naturalness . . . . .	16
<b>5-1.</b>	Story Map . . . . .	248
<b>9-1.</b>	Climbing the Fear Hierarchy . . . . .	378
<b>9-2.</b>	Breath Curves . . . . .	386
<b>13-1.</b>	Bloom's Taxonomy . . . . .	467
<b>13-2.</b>	Argument Map . . . . .	468
<b>13-3.</b>	What—So What—Now What . . . . .	468

# Preface

The original purpose of this manual was to provide beginning speech-language pathology graduate students with a practical introductory guide to intervention. It also provided practicing clinicians with a single resource for specific therapy techniques and materials for a wide variety of communication disorders. This new edition continues to fulfill these aims and also reflects the changing information and recent advances in the field of speech-language pathology that are essential to address in a text of this kind. The revisions made in the sixth edition constitute substantial changes in content compared to previous editions. Selected examples include (a) a new chapter on contemporary issues in the profession, such as critical thinking, telepractice, simulation training, and billing/coding information; (b) expanded information on programming with transgender voice disorders; (c) expanded information on intervention with traumatic brain injury; and (d) expanded discussion of multicultural issues relevant to clinical work. We carefully updated each chapter in the areas of treatment efficacy and evidence-based practice to ensure that the book reflects the most current thinking in the research and clinical spheres. Two main factors created the need for a resource of this kind for students. First, speech-language pathology programs across the country are rapidly adopting a preprofessional model of education that minimizes clinical practicum experience at the undergraduate level. Thus, even students with undergraduate degrees in communication disorders are entering graduate school with very little direct knowledge of basic therapy approaches, techniques, and materials. Second, master's programs in speech-language pathology are attracting an increasing number of students with bachelor's degrees in areas other than the hearing and speech sciences. These students enter clinical training without any supporting background. As a result, a genuine need exists for a user-friendly and comprehensive source of effective, practical suggestions to guide beginning clinicians through their first therapy experiences.

Another primary use of this book is as a text for undergraduate and graduate-level courses in clinical methods. Traditional textbooks for such courses tend to be largely theoretical in nature and lack useful information on how to do therapy. Thus, instructors are often faced with the task of assembling their own clinical materials to complement the text. One of the aims of this text is to provide such supplementary information in a single source. In response to requests from readers, this new edition is accompanied by quizzes and PowerPoint slides for each chapter, along with a premium website containing the forms and appendices in the book for easy download and use.

This manual also was written with the practicing clinician in mind. Speech-language pathologists are handling caseloads/workloads with a broader spectrum of communication disorders than ever before. This trend is occurring in all clinical settings, from hospitals to public schools to early childhood centers. Moreover, there has been a dramatic increase in private practice as a service-delivery model in the field of speech-language pathology. Many practitioners work independently and may not be able to consult readily with colleagues about the management of communication disorders that are outside of their main areas of expertise. This manual can serve as an accessible and reliable source of basic treatment information and techniques for a wide range of speech and language disorders.

The information in this book is based on existing knowledge about communication disorders and available research data, as well as the combined clinical experiences of the authors. It is not

intended as a cookbook approach to intervention. The complexities of communication disorders preclude such a parochial approach. The therapy targets and activities we included are meant to serve as illustrations of basic intervention practice, and only as starting points in the therapeutic process. By their very nature, therapy programs for communication disorders should be designed to accommodate each client's unique strengths and weaknesses as well as individual learning styles.

## **Text Organization**

---

The manual is organized into two main sections. The first section (Chapters 1 and 2) covers basic principles of speech-language intervention and information reporting systems. The second section includes eight chapters (Chapters 3 to 10) devoted to therapy strategies for specific communication disorders. Each of these chapters includes a brief description of the disorder, example case profiles, specific suggestions for the selection of therapy targets, and sample therapy activities. These have been designed to illustrate the most common characteristics of a given disorder, as well as typical approaches to treatment. Each chapter concludes with a set of helpful hints on intervention and a selected list of commercially available therapy materials

The second section also includes Chapter 11, which offers practical suggestions for beginning clinicians regarding effective client and family counseling skills. Chapter 12 offers discussion and guidelines regarding multicultural issues in speech-language interventions. And, this sixth edition of the book concludes with a new chapter that incorporates discussion in profession-wide areas of emergent interest to educators, students, and clinicians. Reference tables, charts, and reproducible forms are included throughout the manual.

The focus of this text is on the most common characteristics and treatment approaches for a given disorder. Unusual or atypical populations are beyond the scope of this book. This book is written from the perspective of Standard American English. The information, procedures, and activities contained in each chapter should be adapted in a culturally appropriate manner.

## **New to the Sixth Edition**

---

This new edition includes updated citations and references throughout as well as current information on treatment efficacy in all disorder chapters to reflect recent developments in the field. In addition, we added the following:

- a new chapter on contemporary issues, including critical thinking, telepractice, simulation technologies, and coding and reimbursement;
- new tables on skill development in gesture, feeding, and vision;

- new information on therapist effects/therapeutic alliance;
- coverage of emerging techniques for voice disorders and transgender clients; and
- expanded information on
  - childhood apraxia of speech,
  - cochlear implants,
  - cultural and linguistic diversity,
  - interprofessional practice,
  - shared book reading,
  - traumatic brain injury,
  - treatment dosage/intensity, and
  - vocabulary development.

## **PluralPlus Companion Website**

---

This edition comes with access to a PluralPlus companion website containing PowerPoint lecture slides and quizzes for each chapter, and all of the forms from the book in digital format for easy duplication and customization to specific experiences. See the inside front cover of the book for the website URL and access code.



# The Essential Ingredients of Good Therapy: Basic Skills

## Philosophy

---

In the field of communication disorders, the domains of research and clinical practice are frequently regarded as distinctly separate entities. It is true that the aims of the two activities are very different. The main purpose of research is to add to the existing knowledge base in a given area, whereas the ultimate goal of clinical work is to change behavior. However, the two activities also share many common characteristics, and these similarities outweigh the differences. The most fundamental similarity is that both research and clinical practice are scientific processes based on the highest quality of evidence available (often referred to as evidence-based practice). Therefore, it is our view that intervention, like research, should be based on the principles of the scientific method. Both research and intervention involve the following:

- Identification of a problem
- Review of existing knowledge regarding the problem area
- Formulation of hypotheses about how to solve the problem
- Manipulation of the independent variable(s)
- Collection and analysis of data
- Formulation of conclusions about the validity of the original hypotheses

Based on the authors' experiences, an essential ingredient to successful intervention is critical thinking. Critical thinking is the objective analysis and evaluation of an issue to form a judgment, which goes beyond memorization/recall of information and is free from feelings or personal biases. Teaching beginning clinicians critical-thinking skills supports their ability to manage complex issues inherent in clinical work. This important topic is discussed more extensively in Chapter 13.

Speech and language intervention is a dynamic process that follows a systematic progression. It begins with the diagnosis of a communication disorder and is followed by the selection of appropriate therapy targets. Training procedures are then implemented to facilitate the acquisition of the target behaviors. The intervention process is complete when mastery of these behaviors is achieved. Periodic follow-up is performed to monitor retention and stability of the newly acquired behaviors. Throughout all stages of therapy, advocacy is an important role for the speech-language pathologist (SLP). All clinicians should be aware of the Americans with Disabilities Act (1990). This federal legislation (Public Law 101-336) and its amendments (Public Law 110-325) prohibit discrimination and ensure equal opportunity in public accommodations, employment, transportation, government services, and telecommunications (see <https://www.ada.gov> for more specific information). Speech-

language pathology is a dynamic profession that is continually evolving. The **scope of practice** in speech-language pathology is delineated by the American Speech-Language-Hearing Association, or ASHA (ASHA, 2007b). SLPs are responsible for fully understanding the areas of communication and swallowing that they are qualified to address (e.g., voice, language, fluency) as well as the range of services that they are eligible to deliver (e.g., screening, consultation, treatment). A related document of major importance to all SLPs is the 2016 **ASHA Code of Ethics** (see Appendix A at the end of this book). This document outlines standards for professional behavior with regard to several areas (e.g., client welfare, SLP competence level, public understanding of the profession).

## Universal Design Principles for Learning: An Overarching Framework

---

In 2000, Rose and Meyer put forth a framework based on the premise that every individual, regardless of physical, cognitive, sensory, learning, or other type of disability, is entitled to universal access to information and to learning. Their model is characterized by three universal design principles for learning (UDLs): multiple means of representation, multiple means of expression, and multiple means of engagement. As applied to educational and clinical settings, it is meant to be a theoretical framework for providing the most appropriate supports for children and adults and includes the following:

- *Multiple means of representation:* There must be multiple methods available by which individuals can access and learn important information and skills (e.g., traditional textbook augmented by supplemental Internet resources, speech-to-text media).
- *Multiple means of expression:* Various methods and modalities must be available for individuals to demonstrate their mastery of information and skills.
- *Multiple means of engagement:* Individuals must be provided with enough successful learning opportunities and meaningful interactions to maintain adequate motivation for learning.

The crux of UDLs is instructional flexibility to provide the most suitable options for different learners. For individuals with disabilities, UDLs include accommodations, modifications, and assistive technology. **Accommodations** are changes that help clients overcome or compensate for their disability, such as preferential seating or allowing written rather than spoken communication. **Modifications** are changes in informational content or expectations of an individual's performance. Examples include a decreased amount of classwork/homework or reduced goals for productivity or learning.

Also inherent in UDLs is the use of **assistive technology (AT)** as support for students and adults with disabilities (Dalton, Pisha, Eagleton, Coyne, & Deysher, 2002; Hall, Meyer, & Rose, 2012; Ralabate, 2011; Strangman, 2003). AT may include speech-to-text software that converts speech into text documents, translation software for English-language learners, and Internet access as a means of information gathering. In all cases, adequate training must be provided so that individuals can use the AT successfully and reliably. We must emphasize that these technologies are supportive and do not replace direct instruction.

## General Principles of Intervention

The basic principles of effective intervention are consistent with a UDL framework and apply to clients of all ages and disorders. These include the following:



- Intervention is a dynamic rather than static process in which the clinician continuously assesses a client's progress toward established goals and modifies them as necessary.
- Intervention programs should be designed with careful consideration of a client's verbal and nonverbal cognitive abilities. Knowledge of a client's level of cognitive functioning is critical to making decisions about eligibility for treatment and selecting appropriate therapy objectives.
- The ultimate goal of intervention is to teach strategies for facilitating the communication process rather than teaching isolated skills or behaviors (to the extent possible). Whereas skills are required to achieve specific outcomes in given situations, strategies enable the individual to know when and how to use these skills in new and varied learning contexts.
- Speech and language abilities are acquired and used primarily for the purpose of communication and therefore should be taught in a communicative context. To the extent possible, therapy should occur in realistic situations and provide a client with opportunities to engage in meaningful communicative interactions.
- Intervention should be individually oriented, based on the nature of a client's specific deficits and individual learning style.
- Intervention should be designed to ensure that a client experiences consistent success throughout all stages of the therapy program.
- Intervention is most effective when therapy goals are tailored to promote a client's knowledge one step beyond the current level.
- Intervention should be terminated once goals are achieved or the client is no longer making demonstrable progress.
- Intervention practices must be based on the best scientific evidence available.
- Intervention should be sensitive to a client's values and beliefs as well as cultural and linguistic background.

To provide effective intervention for any type of communication disorder, SLPs must acquire certain essential clinical skills. These skills are based on fundamental principles of human behavior and learning theory. The following categories of clinical skills are the building blocks of therapy and serve as the foundation for all disorder-specific treatment approaches:

- *Programming:* Selection, sequencing, and generalization of therapy targets
- *Behavior modification:* Systematic use of specific stimulus-response-consequence procedures
- *Key teaching strategies:* Use of basic training techniques to facilitate learning
- *Session design:* Organization and implementation of therapy sessions, including interpersonal dynamics
- *Data collection:* Systematic measurement of client performance and treatment efficacy

Successful intervention requires the ability to effectively integrate these five parameters into a treatment program. Appendix 1–A provides a checklist of clinician behaviors that correspond to each

of the parameters. This checklist can be used by students as a guide for observing therapy sessions or by supervisors for evaluating student clinician performance. The remainder of this chapter is devoted to a detailed discussion of each basic skill area.

## Programming

---

Programming involves the selection and sequencing of specific communicative behaviors. New behaviors are introduced and taught in highly structured situations with multiple prompts and maximal support provided by the clinician. Subsequent activities progress through a hierarchy of difficulty and complexity, with decreasing support from the clinician. The client demonstrates generalization of each newly learned behavior by using it in novel situations or contexts. The programming process culminates with a client's habitual and spontaneous use of a behavior in everyday speaking and listening situations.

### Selection of Therapy Targets

The first step in programming is identification of the communication behaviors to be acquired over the course of the treatment program. These therapy targets are often referred to as **long-term goals**. Initial information about potential therapy targets should be obtained by reviewing the results of previous diagnostic findings. Frequently, assessment data are based, in part, on the administration of standardized tests. These tests typically are designed to sample only one or two exemplars of a given communication behavior. However, a single incorrect response does not constitute a sufficient basis for the inclusion of a behavior as a target in a treatment program. It indicates only a potential area of weakness, which then must be sampled more extensively to determine whether a genuine deficit exists. In addition, it is essential that a clinician consider the client's cultural and linguistic background when identifying potential therapy targets. Speech and language differences arising from dialect usage or a non-English native language do not constitute a communicative disorder. Refer to Chapter 12 for common characteristics of African American English, Spanish-influenced English, and Asian-influenced English.

This sampling is accomplished through the administration of **pretreatment baselines**. Baselines are clinician-designed measures that provide multiple opportunities for a client to demonstrate a given communicative behavior. A good rule of thumb is to include a minimum of 20 stimuli on each pretreatment baseline. The ratio of correct versus incorrect responses is calculated; the resulting percentage is used to determine whether the behavior should be selected as a therapy target. Many clinicians view a performance level of 75% accuracy or higher as an indication that the communication skill in question is not in need of remediation. Baseline measures that fall below the 75% accuracy level represent potential intervention targets. Ultimately, however, the selection of appropriate therapy targets relies heavily on clinical judgment. Some clinicians believe that behaviors that occur with at least 50% accuracy represent targets with the best potential for improvement. Other clinicians argue strongly that behaviors with much lower baseline rates of accuracy may be the most appropriate choices based on individual client characteristics (e.g., intelligibility level, age).

Often, clients present with several behaviors that qualify as candidates for remediation. For individuals who demonstrate a large number of errors, clinicians may choose a *broad* programming strategy that attacks as many targets as possible in a given time frame. Alternatively, clinicians may select a *deep* programming strategy for clients who demonstrate either relatively few or highly atypical errors. In addition, clinicians typically employ one of two basic approaches for choosing among potential targets: developmental/normative or client specific.

### The Developmental/Normative Strategy

This strategy is based on known normative sequences of communicative behaviors in typically achieving individuals. Therapy targets are taught in the same general order as they emerge developmentally. When two or more potential targets are identified from baseline procedures, the earliest emerging behaviors are selected as the first therapy objectives. Following are two examples that illustrate use of the **developmental** strategy.

A 5-year-old child with an articulation disorder produces the following speech sound errors on baseline procedures:

- /p/ for /f/ as in **p**inger for **f**inger
- /t/ for /ʃ/ as in **t**ip for **sh**ip
- /d/ for /dʒ/ as in **d**uice for **j**uice
- /d/ for /b/ as in **d**oat for **b**oat

Use of the developmental strategy guides the clinician to select /b/ as the initial therapy target, because typically developing children demonstrate mastery of this sound earlier than the others. According to a developmental progression, /f/ is the next logical target, followed by /ʃ/ and /dʒ/.

A 4-year-old child with a language disorder exhibits the following grammatical errors on baseline procedures:

- Omission of present progressive tense, as in “The boy **play**” for “The boy is **playing**”
- Omission of the plural marker on regular nouns, as in “I see two **bike**” for “I see two **bikes**”
- Overgeneralization of regular past tense, as in “He **runned** down the street” for “He **ran** down the street”

Use of the developmental strategy dictates that the first target for therapy is the present progressive form (*is + verb + -ing*), because it is the earliest of the three structures to emerge. The plural marker is the next behavior to be targeted, followed by the regular past-tense form.

**Note:** With clients from different cultural/linguistic backgrounds, these grammatical forms may reflect a language difference rather than a language disorder. Therefore, intervention may not be warranted.

The developmental strategy tends to be most effective for articulation and language intervention with children. This strategy has less application for adults and disorders of voice and fluency.

A developmental strategy for target selection should be implemented with careful consideration of at least two factors. The sample population from which the norms were derived may have been too

small to permit valid generalization of the findings to other populations. Moreover, the characteristics of the standardization sample (e.g., ethnicity, gender, socioeconomic status) may differ significantly from those of an individual client. Consequently, it may be difficult to draw direct comparisons between the client's performance and the group norms.

### The Client-Specific Strategy

Using the **client-specific** strategy, therapy targets are chosen based on an individual's specific needs rather than according to developmental norms. Relevant factors in the selection of treatment objectives include (a) the frequency with which a specific communicative behavior occurs in a client's daily activities; (b) the relative importance of a specific communicative behavior to the client, regardless of how often it occurs; and (c) the client's potential for mastery of a given communication skill. This last factor addresses the notion of *stimulability*, which is typically defined as the degree to which a client can approximate the correct production of an error pattern on imitation. Following are two examples that illustrate the use of the client-specific strategy.

Mr. Max Asquith, a 52-year-old computer programmer, demonstrates the following speech and language characteristics on pretreatment baseline procedures:

- Omission of final consonants such as /s/, /k/, and /θ/
- Distortion of vowels in all word positions
- Misarticulation of consonant blends, such as /br/, /pl/, /fl/, /ks/, and /skw/
- Omission of the copula forms (*is* and *are*) as in “He sad” for “He is sad”
- Difficulty with the accurate use of spatial, temporal, and numerical vocabulary
- Difficulty with subject-verb agreement, especially third-person singular constructions, as in “He *drink* milk” for “He *drinks* milk”

From the client-specific perspective, initial speech intervention targets could consist of /ks/ and /skw/, because these blends occur in the client's name and therefore constitute a high priority for him. An appropriate initial language target for this client would be vocabulary words that convey number concepts, because his position as a computer programmer relies heavily on the use of this terminology.

A 6-year-old child with an articulation disorder exhibits the following speech sound errors on baseline procedures:

- /θ/ for /s/ as in *thun* for *sun*
- /g/ for /d/ as in *guck* for *duck*
- /w/ for /l/ as in *wight* for *light*
- /ʃ/ for /tʃ/ as in *shew* for *chew*

Using the client-specific strategy, the initial therapy target would be /s/, regardless of developmental considerations. The results of stimulability testing conducted during the diagnostic test indicated that this child's ability to imitate /s/ was superior to performance on the other error sounds. In addition, /s/ occurs far more frequently in English than /l/, /w/, and /tʃ/.

Unlike the developmental approach, a client-specific strategy can be implemented across a wide range of communication disorders with both pediatric and adult populations. In addition, a combination of the two strategies is often an effective way to approach therapy target selection for children with speech and language impairments.

### Sequencing of Therapy Targets

Following therapy target selection and prioritization, programming involves the development of a logical sequence of steps that will be implemented to accomplish each objective. Three major factors determine the progression of the therapy sequence: *stimulus type*, *task mode*, and *response level*. The following outline presents a hierarchy of complexity for each of these factors.

#### *Stimulus Type (nature of input used to elicit target responses)*

- Direct physical manipulation
- Concrete symbols
  - Objects
  - Photographs/color pictures
  - Black-and-white line drawings
- Abstract symbols
  - Oral language
  - Written language

#### *Task Mode (type of clinician support/scaffolding provided to obtain desired responses)*

- Imitation
- Cue/prompt
- Spontaneous

#### *Response Level (degree of difficulty of target responses)<sup>1</sup>*

- Increase length and complexity of desired response
  - Isolation

<sup>1</sup>This response-level hierarchy pertains to oral responses only. Other response types, such as gesture, sign, and writing, may require alternative hierarchies of difficulty.

- Syllable
- Word
- Carrier phrase (e.g., “I see a \_\_\_\_.”)
- Phrase
- Sentence
- Text (conversation, narration)
- Decrease latency (actual time) between stimulus presentation and client response

The sequencing process starts with a decision regarding the most appropriate level to begin training on each target behavior. Pretreatment baseline data for a given target are analyzed to determine the entry training level. Rules of thumb that can be used are as follows:

- If a client obtained a baseline score lower than 50% accuracy, training on that behavior should begin just below the level of difficulty of the baseline stimulus items.
- If the score was between 50% and 75% accuracy, training can begin at the same difficulty level as the baseline stimuli.

For example, a 5-year-old client scored the following on baseline measures for initial /s/: word level = 65%; carrier phrase level = 40%; and sentence level = 30%. In this example, therapy would begin at the word level of difficulty.

Adherence to these procedures generally will result in a progression of targets at the appropriate levels of difficulty. However, there may be occasions when a client does not perform as predicted; a chosen task turns out to be too difficult or too easy for the individual at this time. The clinician must recognize this situation when it occurs and immediately modify the task rather than persist with the original plan. This modification is known as **branching** and is achieved by increasing or decreasing the difficulty level by one step according to the therapy sequence hierarchies listed previously.

As the client’s performance improves and initial training objectives are mastered, the stimulus type, task mode, and response level should be manipulated systematically to gradually increase the difficulty of therapy tasks until the final criterion is met for a given target. This criterion level is generally set at 90% accuracy or higher in everyday conversational interactions.

The following sample behavioral objectives illustrate the manipulation of each of the three factors:

*Behavioral objective:* The client will imitatively produce /s/ in the initial position of single words with 90% accuracy while naming 20 photographs.

*Modified stimulus type:* The client will imitatively produce /s/ in the initial position of single words with 90% accuracy while naming 20 *written* words.

*Modified task mode:* The client will *spontaneously* produce /s/ in the initial position of single words with 90% accuracy while naming 20 photographs.

*Modified response level:* The client will imitatively produce /s/ in the initial position of *words in carrier phrases* with 90% accuracy in response to 20 photographs.