Treatment Resource Manual

for Speech-Language Pathology

Seventh Edition

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PLURAL PUBLISHING
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Typeset in 11.5/14 Adobe Caslon by Flanagan's Publishing Services, Inc.
Printed in China by Regent Publishing Services Ltd.

Library of Congress Cataloging-in-Publication Data:

INames: Roth, Froma P., author. | Worthington, Colleen K., author.
Title: Treatment resource manual for speech-language pathology / Froma P. Roth, Colleen K. Worthington.
Description: Seventh edition. | San Diego, CA : Plural, [2025] | Includes bibliographical references and index.
Identifiers: LCCN 2023037129 (print) | LCCN 2023037130 (ebook) | ISBN 9781635506532 (paperback) | ISBN 1635506530 (paperback) | ISBN 9781635504514 (ebook)
Subjects: MESH: Speech Therapy--methods | Language Therapy--methods | Communication Disorders--therapy
Classification: LCC RC423 (print) | LCC RC423 (ebook) | NLM WL 340.3 | DDC 616.85/5--dc23/eng/20230824
LC record available at https://lccn.loc.gov/2023037129
LC ebook record available at https://lccn.loc.gov/2023037130

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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 this seventh edition provided important changes in content compared to previous editions. Selected examples include (a) a new focus on a social model of disability (diversity-affirming approach to intervention); (b) expanded and reorganized information on treatment approaches for autism; (c) expanded information on intervention with traumatic brain injury (TBI); and (d) updated 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 a premium website that provides substantial new content to enhance classroom instruction and strengthen student learning. It also includes 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, particularly since the pandemic, 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 seventh edition of the book concludes with Chapter 13 that incorporates a discussion in profession-wide areas of 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 Seventh 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:

- New focus on a social model of disability (diversity-affirming approach to intervention)

- Substantial update on treatment efficacy of intervention approaches for autism
- Expanded discussion of the use of telepractice to remotely conduct intervention
- Expanded information on cultural/linguistic diversity and cultural responsiveness/competence within the context of therapeutic intervention.
- Updated information on incidence/prevalence of aphasia and expanded discussion of treatment efficacy in TBI, spasmodic dysphonia, and goals for treatment of motor speech disorders
- Additional Helpful Hints in each disorder chapter
- Updated lists of Additional Resources and Recommended Readings for each chapter
- QR codes in the margins lead to websites of the key resources discussed
- Enhancements to the online ancillary materials as mentioned below

PluralPlus Companion Website

This edition comes with access to a PluralPlus companion website containing updated PowerPoint lecture slides, self-study quizzes, and essay questions for each chapter. In addition, it incorporates the book's reference section along with a list of clickable URL citations organized by chapter. All book appendices can be found on this ancillary website. A new feature of this edition is a collection of video clips and suggested student learning activities as well as all of the book's forms 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 instructions.**

About the Authors

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Part One

Preparing for Effective Intervention

Chapter 1

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 2023 **ASHA Code of Ethics** (see Appendix A on the companion website). 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 for learning (UDL) principles: 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 et al., 2002; Hall et al., 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, listed on the companion website, 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.

In recent literature (e.g., DeThorne & Gerlach-Houck, 2023), there is a growing call for intervention that is based on a **social model of intervention**. This approach does not focus on how to bring the client up to typical societal expectations. Instead, it identifies ways to modify the attitudes and structures of society to accommodate the client's communication profile. Rather than targeting specific skill deficits demonstrated by the client, a social model focuses on reducing barriers to successful communication found within the individual's environment or interpersonal relationships. This framework focuses on enhancing communicative daily function in society by providing supports, accommodations, and modifications that address physical, environmental, and sensory barriers experienced by the client.

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 /ʤ/ 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 /ʤ/.

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 play***ing***"
- 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.

For clinicians who choose to approach therapy from a social model of intervention, potential goals might include training peers to initiate communication with an autistic child, encouraging teachers to provide written as well oral instructions in the classroom, or educating coworkers on best practices for conversational interactions with a colleague who stutters.

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 ***th***un for ***s***un
- /g/ for /d/ as in ***g***uck for ***d***uck
- /w/ for /l/ as in ***w***ight for ***l***ight
- /ʃ/ for /ʧ/ as in ***sh***ew for ***ch***ew

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 /ʧ/.

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)[1]

- Increase length and complexity of desired response
  - Isolation
  - 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.

[1]This response-level hierarchy pertains to oral responses only. Other response types—such as gesture, sign, and writing—may require alternative hierarchies of difficulty.