INTERVENTIONS for
Speech
Sound
Disorders
in CHILDREN

2ND EDITION

A. Lynn Williams
Sharynne McLeod
Rebecca J. McCauley
Foreword by Caroline Bowen
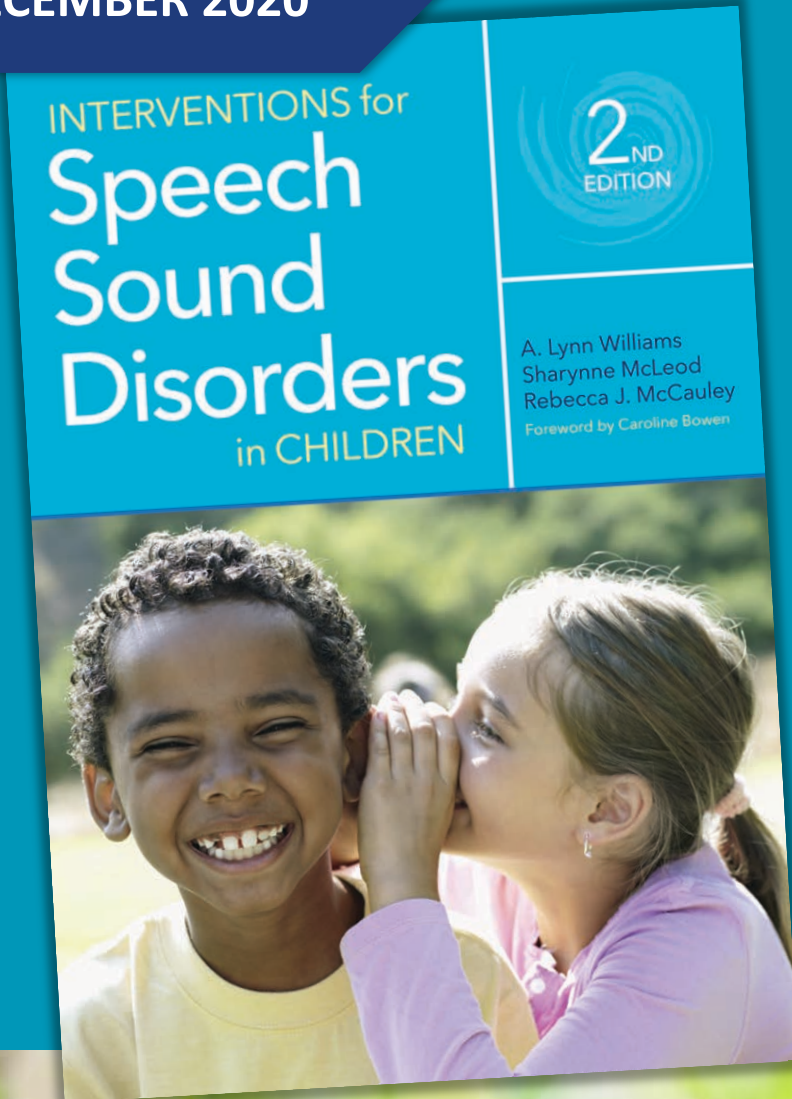
# NEW EDITION
of **bestselling textbook** for speech sound disorder courses!

DISCOVER WHAT'S NEW ▶

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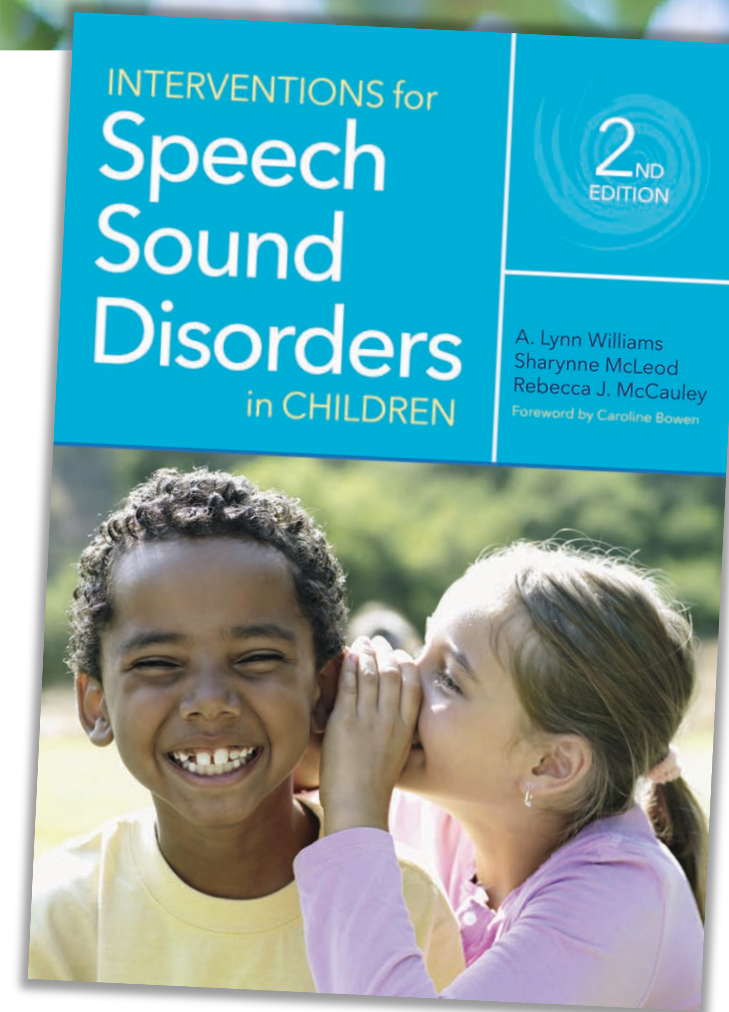
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INTERVENTIONS for
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**2ND EDITION**

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# About *Interventions for Speech Sound Disorders in Children, Second Edition*

# About the Book

An essential building block of every speech-language pathologist's professional preparation, the second edition of this bestselling textbook is a **comprehensive critical analysis of 21 interventions** for highly prevalent speech sound disorders (SSD) in children.

Bringing together a **powerhouse team of international experts**, this new edition has been **revised and enhanced** with current research, new interventions, more guidance on selecting interventions, and updated video clips that show the approaches in action.

# About the Book

For each intervention, readers will get a clear explanation of its robust evidence base, plus thorough guidance on implementing the approach, monitoring progress, and using the intervention with children from culturally and linguistically diverse backgrounds.

A **key graduate-level text** and an **important professional resource** for practicing SLPs, early interventionists, and special educators, this book will help readers choose and use the best interventions for children with phonological or motor-based speech disorders.

# About the Editors

## A. Lynn Williams, Ph.D.

A. Lynn Williams, Ph.D., joined the Communicative Disorders faculty of East Tennessee State University in 1995 following academic positions at Oklahoma State University and California State University at Fullerton. Most of her research over the past decade has involved clinical investigations of models of phonological treatment for children with severe to profound speech disorders.

Read Dr. William's full bio

## Sharynne McLeod, Ph.D.

Ms. Simmons is a Ph.D. candidate in Cognitive Psychology at the University of Connecticut. She is a National Science Foundation fellow and recipient of a predoctoral training grant funded by the National Institute of Health to evaluate language processing using eye tracking and electroencephalography in late talking toddlers.

Read Dr. McLeod's full bio

# About the Editors

## Rebecca J. McCauley, Ph.D., CCC-SLP

Rebecca McCauley, Ph.D., CCC-SLP, is a professor in Speech and Hearing Science at The Ohio State University. She is a Fellow of the American Speech, Language, and Hearing Association (ASHA) and former associate editor of *American Journal of Speech-Language Pathology*. She will be receiving Honors of ASHA at this year's annual convention in Boston. Her research and scholarly interests include issues in assessment and treatment of communication disorders in children, especially those with speech sound disorders, including childhood apraxia of speech.

Read Dr. McCauley's full bio

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# Interior Features

# About the Features

*Interventions for Speech Sound Disorders in Children, Second Edition* includes a variety of features designed to enhance reader understanding.

Examples include:

- Abstracts
- Tables and figures
- Chapter summaries
- Case studies
- Key terms
- Suggested readings
- Video demonstrations
- Learning activities
- References

# Abstracts

Complexity Approach

Michele L. Morrisette

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**ABSTRACT**
The goal of a complexity approach for phonological intervention is to improve intelligibility by promoting systemwide gains in a child's sound system. The focus is on selecting complex targets as input in treatment. Complex target selection is guided by **implicational relationships** at the levels of phones, phonemes, and syllables. Implicational relationships govern sound co-occurrences such that more complex structures imply the presence of less complex structures in a sound system. In line with the implicational relationships, teaching more complex targets has been shown to promote learning of less complex structures.

Each chapter begins with an abstract to orient readers to the key content of that particular chapter.

# Case Studies

## Case Study

A range of case studies are documented in the literature demonstrating the use of a complexity approach to treatment (e.g., Barlow & Gierut, 2002; Morrisette et al., 2006; Storkel, 2018). One child who participated in the Gierut (1999) study related to onset clusters is described as an illustration of the approach. "Subject 5," a male child age 7;8, was seen three times a week for individual hour-long sessions in a university clinic. The child presented with normal hearing and scored within a typical range on an examination of oral-motor structure and function, vocabulary, and other language and cognitive skills. A standardized articulation test and supplementary single-word probe data were collected prior to treatment to allow for a complete phonetic, phonemic, and syllabic analysis. The child scored at least one standard deviation below the mean on a standardized articulation test and excluded the following sounds from the phonemic inventory: /ŋ θ ð s z ʃ l ɹ/. The syllabic analysis revealed that he produced onset clusters at sonority differences 6 and 5 prior to treatment. A sonority difference of 5 was the minimal distance or most complex onset cluster produced. This was demonstrated by the child's use of [bw-] as a substitute for other target clusters. Treatment targeted a more complex cluster /fl-/ at a smaller sonority difference of 3. The child substituted the singleton [f] for the target /fl-/ prior to treatment. In treatment, the target onset cluster /fl-/ was embedded in nonword stimuli in a story paradigm that was read to the child each week of treatment. Production training then followed the steps and criterion outlined in this chapter. Generalization probes were also administered in accord with the steps and schedule described. Probe data indicated learning of the treated cluster /fl-/ at a sonority difference of 3 and other untreated onset clusters at sonority differences of 2 (or less), 4, 5, and 6. Gains were observed for 15 target clusters overall, with 12 of the 15 produced with more than 50% accuracy in probe measures. This case illustrates widespread gains in both marked and unmarked clusters following treatment of a complex onset cluster.

In every chapter, one or more case studies illustration a child for whom the described intervention was helpful.

# Video demonstrations

## ABOUT THE VIDEO

The video for this chapter, Minimal Pairs Intervention, can be streamed from the Brookes Publishing Download Hub. This video shows Elise Baker working with a preschool-age boy (Caleb—[pseudonym]) with a phonological impairment characterized by palatal fronting. At the beginning of the session, a single-word baseline probe of palatal fronting is conducted. Notice Caleb's production of [su] for *shoe* /ʃu/. Palatal fronting was evident on voiced and voiceless postalveolar fricatives and affricates. Given that Caleb was stimulable—he could imitate [ʃ, ʒ, tʃ, dʒ] in isolation with an auditory model—the meaningful minimal pairs approach was selected. The first two steps (familiarization and pick-up) were successfully completed in one drill-play activity. The remaining video segments show a series of drill-play activities designed to elicit 100 production practice trials at word level. Note how Caleb was able to revise his production and create a contrast between the minimal pair words following a **pragmatic cue.**

18 high-quality video clips offer a vivid inside look at intervention techniques in action

# Tables and figures

Complexity Approach                                                    93

**Table 5.1.** Target populations for the complexity intervention approach.

| Primary populations | Secondary populations | Additional considerations |
|---|---|---|
| Children between the ages of 3 and 6 years with functional phonological disorders. | The complexity approach has been extended to children under the age of 3 and older than 6 (e.g., Gierut, 1999; Taps, 2006, 2008; Tyler & Figurksi, 1994). The approach | Treatment efficacy results in support of complex targets for phonological intervention have typically included children who score at least one standard deviation below the mean on a stan- |
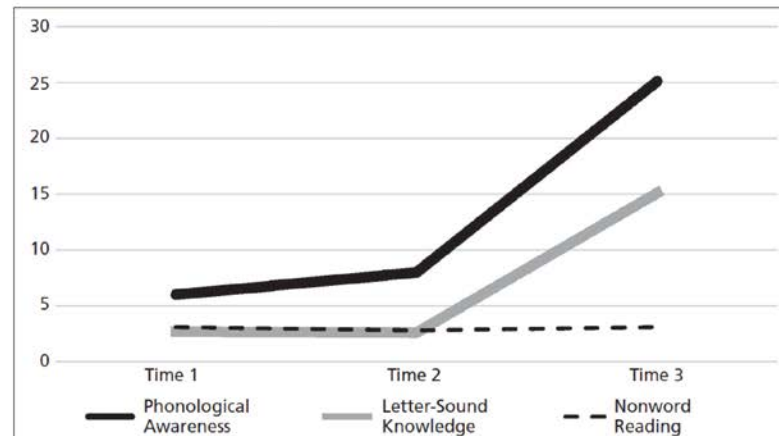


**Figure 6.1.** Luca's response to usual classroom curriculum and response to classwide intervention focused on phonological awareness and phonics knowledge.

150 tables and figures reinforce important concepts and provide ways to more easily understand the material.

# Key terms



As key terms pertaining to a specific chapter are introduced in the text, they appear in boldface type at their first use; definitions for over 100 terms appear in the Glossary.

# Learning activities

**LEARNING ACTIVITIES**

The following learning activities are designed to help readers develop a rich understanding of how to use digital tools in intervention.

1. From the Edwards and Dukhovny (2017) article, how can students and clinicians critically evaluate digital intervention tools?

2. Describe the available evidence to support the use of digital tools in intervention for SSD.

3. Discuss the role of the SLP when digital tools are used in intervention for SSD.

Each chapter includes a list of two to three learning activities to help readers apply information about the intervention approach.

# Chapter summaries

## SUMMARY

The minimal pairs approach is suitable for children who have a mild, mild-moderate, or moderate-severe phonological impairment characterized by common pattern-based errors that result in a loss of phonemic contrast. Implementation of the approach involves an SLP identifying pattern-based errors or phonological processes in a child's speech, using a target selection approach (i.e., developmental or complexity approach) appropriate for an individual child, identifying two or three phonemes representative of the prioritized phonological processes, generating three to five child-friendly picturable minimal pair words, and following the sequence of steps for one of two versions (either meaningful minimal pairs intervention or perception-production minimal pairs intervention) in a fun drill-play format. The decision as to which version of the approach is selected is influenced by an individual child's pretreatment speech sound stimulability. Once intervention has started, generalization probes need to be regularly gathered, to monitor progress and identify stimulus and response generalization.

Each chapter ends with a summary of the main takeaway points of the intervention approach.

# Suggested readings

**SUGGESTED READINGS**

Gierut, J. (2001). Complexity in phonological treatment: Clinical factors. *Language, Speech, and Hearing Services in Schools, 32,* 229–241.

Gierut, J. (2007). Phonological complexity and language learnability. *American Journal of Speech-Language Pathology, 16,* 6–17.

Gierut, J. A., & Hulse, L. E. (2010). Evidence-based practice: A matrix for predicting phonological generalization. *Clinical Linguistics and Phonetics, 24,* 323–334.

Morrisette, M. L., Farris, A. W., & Gierut, J. A. (2006). Applications of learnability theory to clinical phonology. *International Journal of Speech-Language Pathology, 8,* 207–219.

Storkel, H. L. (2018). The complexity approach to phonological treatment: How to select treatment targets. *Language, Speech, and Hearing Services in Schools, 49,* 463–481.

At the conclusion of each chapter, this section lists helpful resources that provide more information on the intervention discussed.

# References

Citations include review articles, reports of study findings, research findings, and other key references that can be used to find additional information.

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## REFERENCES

*Note: Reference list entries marked with an asterisk (\*) denote sources cited in Table 5.2, Levels of evidence for studies of treatment efficacy for the complexity intervention approach.*

Anderson, R. T. (2002). Onset clusters and the sonority sequencing principle in Spanish: A treatment efficacy study. In F. Windsor, M. L. Kelly, & N. Hewitt (Eds.), *Investigations in clinical phonetics and linguistics* (pp. 213–224). Mahwah, NJ: Erlbaum.

Baker, E. (2007, May). Using sonority to explore patterns of generalization in children with phonological impairment. Paper presented at the annual conference of Speech Pathology Australia, Sydney, Australia.

Barlow, J., & Gierut, J. A. (2002). Minimal pair approaches to phonological remediation. *Seminars in Speech and Language, 23,* 57–67.

Cataño, L., Barlow, J. A., & Moyna, M. I. (2009). A retrospective study of phonetic inventory complexity in acquisition of Spanish: implications for phonological universals. *Clinical Linguistics and Phonetics, 23,* 446–472.

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Gierut, J. (2007). Phonological complexity and language learnability. *American Journal of Speech-Language Pathology, 16,* 6–17.

Gierut, J. A. (2008a). Fundamentals of experimental design and treatment. In D. A. Dinnsen & J. A. Gierut (Eds.), *Optimality theory, phonological*

# New Content

# About the Content

In the new edition, you'll find the following:

- 18 high-quality video clips that offer a vivid inside look at intervention techniques in action

- Expanded information on choosing interventions and implementing them with fidelity

- New featured interventions, including Dynamic Temporal and Tactile Cueing, speech motor programming intervention, articulation interventions, and biofeedback approaches

# About the Content

- Up-to-date research on SSD and interventions, including Levels of Evidence tables that help readers evaluate the evidence base for each intervention

- In-depth discussion of how the interventions relate to the World Health Organization's framework enhancing participation

- New learning activities that help readers apply their understanding of each intervention

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# Organization of Intervention Chapters

Standardized headings across chapters promote easy access to and evaluation of important information about each approach. Each chapter contains the following:

- Target Populations
- Assessment and Analysis Methods
- Theoretical Basis
- Empirical Basis
- Practical Requirements
- Key Components
- Monitoring Progress and Generalization

- Considerations for Children from Culturally and Linguistically Diverse Backgrounds
- Case Study
- Learning Activities
- Future Directions
- Summary
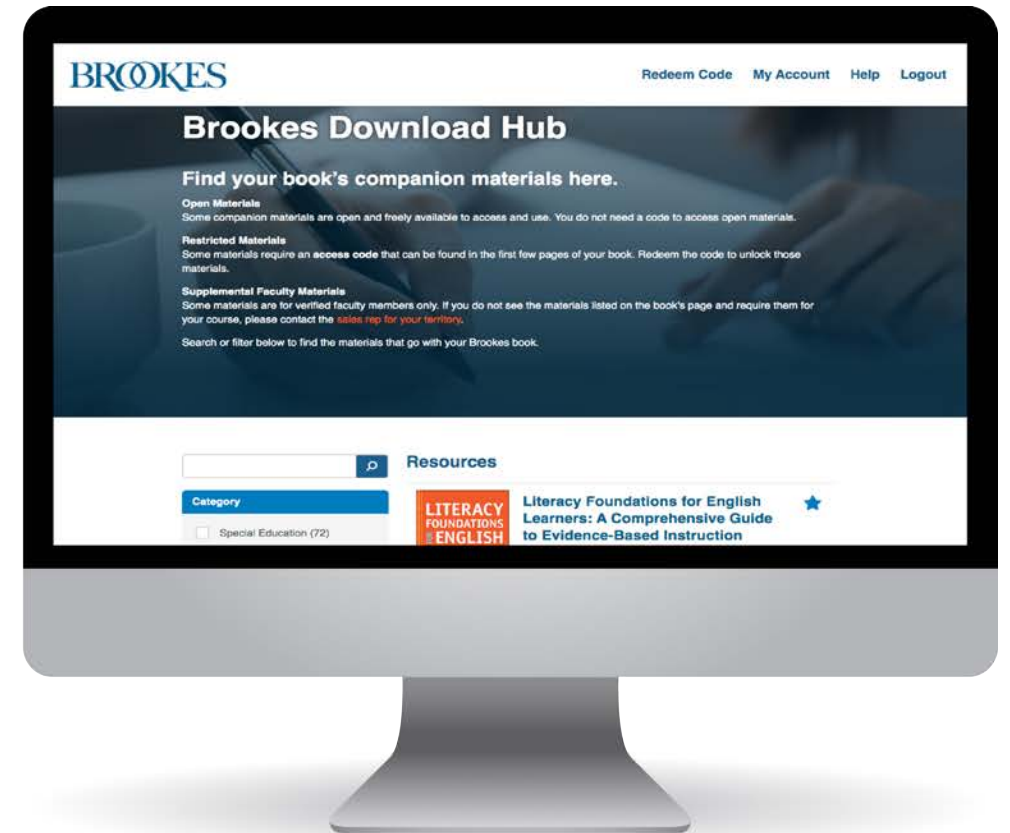- Suggested Readings
- References

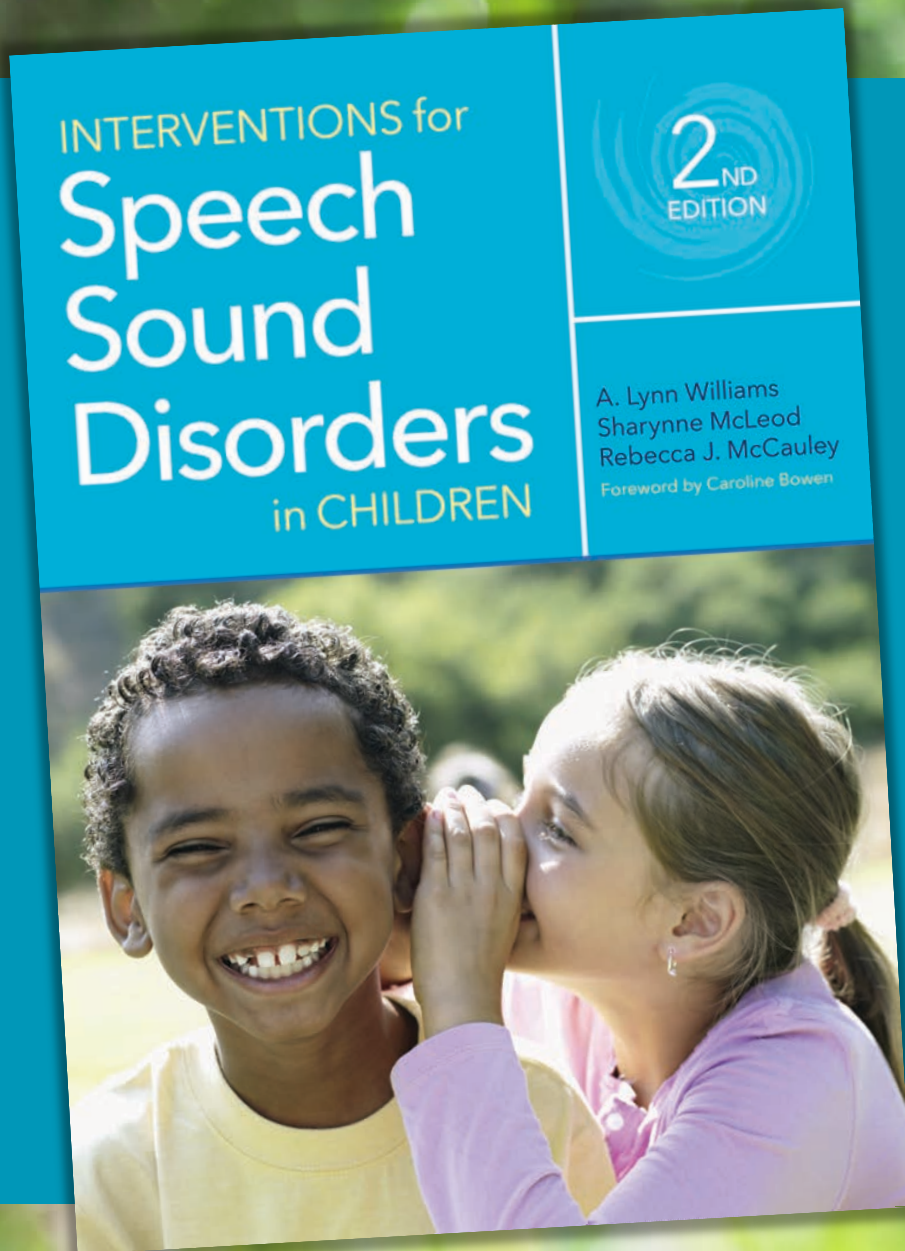BROOKES

# Online Companion Materials

# About the Materials

All purchasers of this book can access, download, and print the following from the Brookes Download Hub:

- 18 high-quality video demonstrations of intervention techniques in action
- more than half a dozen helpful resources including word lists, sample scripts, and more

**Visit the Brookes Download Hub ▶**

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