Feature



Intervention in School and Clinic 1–9
© Hammill Institute on Disabilities 2022
Article reuse guidelines: sagepub.com/journals-permissions
DOI: 10.1177/10534512221081255
isc.sagepub.com



# Applying Co-Teaching Models to Enhance Partnerships Between Teachers and Speech-Language Pathologists

Kathleen N. Zimmerman, PhD, BCBA-D<sup>1</sup>, Jason C. Chow, PhD<sup>2</sup>, Caitlyn Majeika, PhD, BCBA<sup>3</sup>, and Reed Senter, MS, CCC-SLP<sup>2</sup>

#### **Abstract**

Schools are required to educate students in the least restrictive environment (LRE). The number of students with high incidence disabilities, including those with speech or language impairments (SLI), who spend most of their day in the general education classroom has increased in the last decade. Establishing classrooms that proactively address the learning needs of students with SLI is essential to ensure that students are educated in the LRE. Co-teaching is an instructional strategy that utilizes the expertise of two educators to provide instruction in the general education classroom. This article provides an overview of the research on co-teaching and rationale for use with teachers and speech-language pathologists (SLPs), defines two models of co-teaching that can be used between teachers and SLPs to provide instruction in general education classrooms, and offers examples of co-teaching models in practice.

#### **Keywords**

co-teaching, collaboration, language-learning, disabilities, inclusion, service delivery models

In the United States, federal policy has, over time, led to important improvements in the education of students with learning disabilities (LD). One hallmark legislative action was the provision of the Individuals with Disabilities Education Act (IDEA, 2004) that stated students must be educated in the least restrictive environment (LRE). This means that students should be receiving their educational services, consistent with their individual educational needs, alongside their typical peers to the greatest extent possible. This provided opportunities for millions of students with disabilities (SWD) to receive education alongside their peers in inclusive settings and led to many of them receiving more of their education in general education settings. To improve outcomes for these students, educators must determine that the instruction they are receiving in inclusive settings meets their individual educational needs that are formalized and documented on each student's individualized education program (IEP).

In 2019–2020, 7.3 million students in the United States received special education services under IDEA. Of students ages 8 to 21 years, 95% were enrolled in regular schools with 65% spending most of their day (i.e., 80% or

more of the time) in general education classrooms (U.S. Department of Education, Office of Special Education Programs, 2020). Importantly, this is an increase from 59% to 65% over the past decade. As more students with LD spend increased time in general education classrooms, teachers and related service providers are required to partner to deliver instruction, supports, and services that meet the individual needs of all students. This is particularly relevant for students with high incidence disabilities, such as students with speech or language impairments (SLI), who spend most of their time (88%) in general education settings. Establishing instructional environments that proactively and collaboratively address the learning needs of students with SLI is essential to ensure those who are

<sup>1</sup>The University of Kansas, Lawrence, KS, USA <sup>2</sup>University of Maryland-College Park, College Park, MD, USA <sup>3</sup>American Institutes for Research, Arlington, VA, USA

# **Corresponding Author:**

Kathleen N. Zimmerman, The University of Kansas, 1122 West Campus Rd., JRP 531, Lawrence, KS 66045, USA. Email: kathleen.zimmerman@ku.edu

educated in the general education classroom are indeed in their LRE for all services, including related services such as speech and language therapy.

# **Collaborative Service Delivery**

Collaborative service delivery models are effective ways to support students with SLI in inclusive settings in which multiple instructors, including a speech-language pathologist (SLP) and a teacher, deliver instruction and speech and language therapy (Archibald, 2017). Collaborative models include delivering services in general education (Bland & Prelock, 1995; Throneburg et al., 2000), collaborative planning between the SLP and teacher (Chow et al., in press; McIntosh et al., 2007; Throneburg et al., 2000), and coteaching between the SLP and teacher (Farber & Klein, 1999; Kaufman et al., 1994; Murphy et al., 2017; Smith-Lock et al., 2013). Across all models, students receive services integrated in ongoing instruction, rather than pull-out services, to prevent missing time in instruction to receive therapy (Heisler & Thousand, 2021). These models also provide an opportunity for SLPs to model language-supportive strategies for teachers to support the oral language development of all students, not just students with SLI (Heisler & Thousand, 2021). As a result, teachers can reinforce and promote student speech and language goals when the SLP is not present, leading to an increased likelihood of skills maintaining and generalizing for students with SLI (McGinty & Justice, 2006).

# Co-Teaching

One of the most popular methods for supporting SWD in inclusive settings is *co-teaching* (Cook et al., 2017). Co-teaching is defined as the general education teacher and the (a) special education teacher, (b) related service provider (e.g., SLP, occupational therapist), or (c) noncertified staff (e.g., paraprofessional, SLP assistant) "jointly delivering instruction" to students with and without disabilities in an inclusive general education classroom (Friend et al., 2010, p. 11). Co-teaching includes purposeful co-planning and co-delivering instruction that includes data-based, flexible grouping to meet all students' needs (Friend, 2008) and can be used during in-person, hybrid, or virtual instruction. Effective co-teaching, including co-planning and co-delivering instruction, occurs through an equitable partnership that acknowledges the expertise of both professionals and their respective contributions to creating effective instructional environments for all students (Friend et al., 2010). Utilizing the expertise of both co-teaching partners, teachers and related service providers can deliver specially designed instruction and therapy in the context of ongoing access to the general education curriculum (Archibald, 2017).

The benefits of co-teaching are multifaceted. Co-teaching improves learning outcomes for (a) students with behavioral and academic support needs (Cook et al., 2017; Cramer et al., 2010), (b) students receiving gifted and talented services (Hughes & Murawski, 2001; Miedijensky, 2018), (c) students for whom English is not their primary language (Dove & Honigsfeld, 2010), and (d) students without disabilities or support needs (Scruggs et al., 2007). Opportunities for additional positive social interactions (Murawski & Swanson, 2001) and greater skill gains in content areas (King-Sears et al., 2014; Tremblay, 2013) also occur when students receive instruction from two teachers. Not only does acquisition of academic skills improve with co-teaching, but students with LD, including students with SLI, report having two teachers improves their overall class behavior and increases the amount they learn during class (King-Sears et al., 2014).

For students specifically with or at risk of SLI, co-teaching is most effective for improving articulation, intelligibility (Bland & Prelock, 1996), and expressive language (Murphy et al., 2017; Smith-Lock et al., 2013). Co-teaching is also effective for improving specific academic and language domains such as phonological awareness (Hadley et al., 2000; Koutsoftas et al., 2009; van Kleeck et al., 1998; Wilson et al., 2019), content area language (e.g., description of academic content or use of vocabulary in the context of ongoing group activities; Bland & Prelock, 1996; Kaufman et al., 1994), and vocabulary (Farber & Klein, 1999; Hadley et al., 2000; Throneburg et al., 2000).

When engaging in co-teaching instructional arrangements, both the general education teacher and special educator or related service provider teach the whole group, small groups, or individual students (Archibald, 2017; Bouck, 2007; Scruggs et al., 2007). As a result, instructional delivery varies for students as each professional brings their own expertise in effective instructional design and strategies; this variability in instructional access can only be achieved through co-teaching in inclusive settings (Pearl & Miller, 2007).

# **Co-Teaching Partnerships**

According to the U.S. Department of Education, Office of Special Education Programs (2020), the majority of students (i.e., 88%) with SLI spend 80% or more of their day in the general education classroom. The potential benefits of co-teaching suggest that it can be an effective model for SLPs and teachers to provide high-quality services to students with SLI in general education classrooms as it would provide two teachers and a context similar to published studies (i.e., King-Sears et al., 2014; Murawski & Swanson, 2001; Tremblay, 2013). It promotes collaboration in such a way that allows the two educators to contribute their unique knowledge and skills. Speech-language pathologists

provide expertise in communication, particularly language development and disorders. Simultaneously, teachers are able to ground the collaborative effort with relevant curricular targets, strong rapport, understanding of the students' strengths and needs, and behavior management strategies. This cross-collaboration of expertise facilitates the provision of inclusive services with improved instruction and outcomes. Moreover, during co-teaching, both partners may acquire new knowledge and skills that will serve them well in the future (Wallace et al., 2021). In turn, the proactive, collaborative co-teaching partnerships can improve outcomes for a wider range of students with varying levels of need.

One benefit of co-teaching is the inclusive nature of services provided within this setting. Special educators, including SLPs, have an obligation to serve students in the LRE (IDEA, 2004). When possible, this refers to the general education classroom. Traditionally, most (i.e., 56.3%) students receive speech-language services in individual or small group separate settings (Pershey & Rapking, 2003), while fewer (i.e., 33.5%) students receive services in regular education or special education classrooms. Given that small group and individual instruction occurs in general education settings (e.g., during literacy centers—small group direct instruction, read to self time), it seems reasonable that speech and language services could be delivered in formats compatible with inclusive settings. The feasibility of these arrangements paired with the principle of providing services in the LRE support delivering speech and language services in the general education classroom. In other words, the pull-out model should be used only in minimal circumstances in which data suggest therapy results cannot be achieved in the general education setting. Although a review of studies investigating service delivery options concluded a most effective single delivery model (e.g., embedded services in general education or pull-out services in a therapy room) for speech and language services was not clear, the findings did conclude classroom-based services were as effective as services in a separate, pull-out setting (Cirrin et al., 2010). Services provided in the classroom setting were specifically supported for intervention targets, including vocabulary, language, and literacy (Cirrin, 2010). A review of collaborative service delivery models, including co-teaching, between SLPs and teachers demonstrated positive outcomes for all students, but specifically students receiving speech and language therapy services (Archibald, 2017). These findings suggest that SLPs may be able to provide their services just as effectively from the inclusive classroom as they would from a separate setting.

The benefits of classroom-based SLP services are not limited to children with communication disorders. Gillam et al. (2014) found that SLP-directed *push-in* lessons yielded significant improvement on oral language for both children at high risk and children at low risk of a language

disorder compared with a group of children for whom the SLP served as a teacher's assistant. Likewise, Hadley et al. (2000) found that classrooms with collaborative SLP—teacher partnerships produced significantly greater improvements in phonological awareness skills as compared to classrooms without the collaborative partnerships.

An additional benefit of SLP-teacher collaboration is the opportunity to enhance instruction in the classroom setting. This can be partly attributed to the integration of the SLP into curricular activities. Speech-language pathologists bring expertise in communication, allowing them to supplement instruction with practices such as language-supportive strategies (Wallace et al., 2021) and scaffolding (Silliman et al., 2000). Another factor is the ability for the SLP to address communication goals within the more naturalistic setting of the classroom. Provided that school-based speech-language services are intended to ensure that students can access a *free appropriate public education* (FAPE; IDEA, 2004), it is logical to provide services in the setting where the student receives their education.

The benefits of services in naturalistic settings are numerous. Speech-language pathologists can address functional targets embedded within the student's instruction (Ehren, 2000). Rather than targeting discrete skills that have been dissociated from the student's educational setting (e.g., articulation of *r-controlled vowels* in isolation), SLPs can embed their services within the classroom to address the student's communication deficit directly wherein it occurs (e.g., explicitly teaching articulation of r-controlled vowels during a vowel sound sorting activity). Collaborative classroom partnerships yield more improvement to students' vocabulary than noncollaborative services or pull-out therapy (Throneburg et al., 2000).

Perhaps the most meaningful benefit of SLP-teacher partnerships is the potential to improve outcomes for students. While the dearth of research into service delivery models means that the outcomes of co-teaching cannot be directly compared with those of other models of speechlanguage therapy (e.g., pull-out models; Archibald, 2017; Cirrin et al., 2010), some of the findings (Gillam et al., 2014; Throneburg et al., 2000) appear promising. The outcomes achieved through classroom co-teaching are likely to be more meaningful than those achieved in a separate setting due to the functional nature of the services discussed previously (Giangreco, 2000). The skills acquired and rehearsed in the classroom should translate to classroom success compared with skills developed in a separate setting that may not generalize across settings and tasks as readily. A review by McGinty and Justice (2006) supported this claim, finding evidence that classroom service delivery models yielded faster generalization than pull-out models of service delivery. Based on the potential benefits to children with and without language disorders, the ethical considerations of services delivered in the LRE, and the

Table 1. Co-Teaching Model Staffing, Considerations, and Suggested Skills.

Co-teaching model	Staffing	Considerations	Skills to teach in these arrangements
Team Teaching	Teacher SLP	<ul> <li>Shared planning required</li> <li>Trusting relationship needed</li> <li>Comfort with content delivery</li> <li>Establish rapport of both instructors with all students</li> </ul>	<ul> <li>Vocabulary</li> <li>Story elements</li> <li>Articulation</li> <li>Syntax</li> <li>Skills that support content access for all students</li> </ul>
Station Teaching	Teacher SLP	<ul> <li>New co-teaching pair</li> <li>Therapy delivery can stay consistent, just in a new location</li> <li>Skills may work to prime students for another activity</li> <li>Needed shared planning time limited</li> <li>Understanding of content can be limited as each instructor delivers specialized content simultaneously to different groups</li> </ul>	<ul> <li>Phonological awareness</li> <li>Story elements</li> <li>Meta-cognitive verbs</li> <li>Grammar skills</li> <li>Articulation</li> <li>Intensive or scripted curriculum or intervention</li> </ul>

Note. SLP = speech-language pathologist.

improved instruction and outcomes afforded by co-teaching partnerships, this model appears to be a worthwhile endeavor for SLPs and teachers to improve their impact on students' education.

# Teacher and Speech-Language Pathologist Co-Teaching Arrangements

Friend and Bursuck (1999) defined six models of co-teaching: (a) one teach, one observe; (b) one teach, one assist; (c) alternative teaching; (d) station teaching; (e) parallel teaching; and (f) teaming (Friend & Bursuck, 1999). While a detailed discussion of each model is beyond the scope of this article, readers can explore detailed explanations of all six models for in-person (Friend & Bursuck, 2019), hybrid (Barron et al., 2021), or virtual in the aforementioned articles. Co-teaching arrangements consistently demonstrated to be effective for SLPs and teachers include team teaching (Bland & Prelock, 1996; Throneburg et al., 2000), station teaching (Drew, 1998; Gillam et al., 2014; Hadley et al., 2000), and a combination of team teaching and station teaching (Smith-Lock et al., 2013). Table 1 provides considerations and suggested skills for each model listed below.

# Team Teaching

In team teaching, two educators share instructional responsibility for teaching. In other words, the professionals are equal partners and carry out the lesson synchronously (Friend, 2008). Team teaching should be conducted by two certified staff members (i.e., teacher and SLP). During instruction, both professionals teach the whole group

together, rather than reducing the class into smaller groups (Friend, 2008). When introducing new content, this approach may allow both educators to provide dynamic instruction as a short mini-lesson, integrating strategies for learning (e.g., mnemonics) into content instruction (add doubles plus one equations).

Team-teaching arrangements can include the SLP explicitly teaching content area vocabulary during a mini-lesson, including embedding articulation or grammatical supports (e.g., past tense of verbs) with the teacher for a portion of whole group instruction (Throneburg et al., 2000) or during the duration of whole group instruction for 30 to 45 min (Bland & Prelock, 1996) once a week or daily. Language and communication skills that can be embedded into ongoing content instruction during team teaching include vocabulary (Throneburg et al., 2000), articulation and intelligibility of utterances (e.g., comments or questions about a science concept; Bland & Prelock, 1996), and grammatical features (e.g., possessive/s/, past tense of verbs, pronouns; Smith-Lock et al., 2013).

Considerations. Considerations for selecting this instructional model include the amount of shared planning time for the two co-teachers, the teacher and SLPs relationship, preferred teaching styles, and each individual's comfort with the content (Friend et al., 2010). Team teaching requires shared responsibility and planning time, as well as a high level of trust between partners (Friend et al., 2010). Although there is a benefit to shared responsibility, team teaching requires shared planning time and a high level of trust to deliver instruction that supports all students (McLeskey et al., 2019), so it may not be an ideal format to select for a new co-teaching team. When beginning a co-teaching relationship, if

partners choose to select team teaching, focusing on a small amount of time to team teach (e.g., during a 10- to 20-min mini-lesson) rather than an entire class period may be beneficial. Team teaching between an SLP and teacher may be the best selection for targeting skills such as vocabulary (e.g., Throneburg et al., 2000) that can be beneficial to all students, not just students with SLI. If more specific skills such as a specific grammatical feature (e.g., past tense verbs) are also areas of need for a group of students, the co-teaching team may consider using team teaching to teach one larger skill (e.g., content vocabulary) and station teaching to teach a more specific skill (e.g., pronouns; Smith-Lock et al., 2013). The next sections present fictionalized examples to illustrate co-teaching scenarios (see Note 1).

Example. Ms. Kent is an SLP who has been working with students in Mr. Shoro's fourth-grade class who has noticed the students are not transferring the vocabulary skills learned in pull-out individual lessons to their learning in the classroom after a monthly check-in on student progress. She suggests providing services during ongoing instruction to support student acquisition of content vocabulary during instruction. After comparing schedules, they notice that math block is a really good time for both parties and that the word-problem lesson content would need to be adapted to meet the language needs of Ms. Kent's students. However, the student IEPs will need to be amended to provide speech services in the general education classroom. Ms. Kent contacts each caretaker and schedules meetings with each of the IEP teams from Mr. Shoro's class. The meetings take a month to complete, and after a discussion of each student's performance and support needs, each team decides to amend the IEP to provide speech therapy services in the general education classroom and monitor performance after 1 month.

Planning. Ms. Kent was specifically concerned about the lack of progress on vocabulary goals, so both educators decide that applying a team-teaching model during math block may actually work well because this would provide students with more opportunities to engage with different educators with complimentary areas of expertise when learning math. Moreover, their planning times overlap for 30 min each Friday, allowing consistent time to collaborate as needed in addition to their 20-min monthly IEP progress meetings. Mr. Shoro shares the structure of his math lessons as a 20-min mini-lesson to introduce content and then 40 min of centers when students can practice independently while Mr. Shoro pulls small groups for guided practice. Ms. Kent says she is confident she can use explicit vocabulary instruction during the mini-lesson but is unsure how to best incorporate mathematics into the lesson.

Ms. Kent suggests that through this team teaching model she would be able to co-design word-problem activities with Mr. Shoro that focus on general and mathematics-specific vocabulary. She would emphasize expanding on general vocabulary in the word problems with the class (e.g., noting roots and affixes; "sub" meaning smaller/lower in SUBtract or "frac-" meaning broken into pieces in FRACtion), checking for comprehension, and leaning on Mr. Shoro to focus on the specific mathematics vocabulary and the schema-based instruction he was planning to teach. Both educators agree to try this co-teaching scenario for a month to see whether students are able to learn the necessary vocabulary and whether the general classroom is benefiting from the additional, language-focused instruction.

Implementation. New math vocabulary is introduced through a 20-min mini-lesson during which students are seated at their desks with personal whiteboards and markers. Ms. Kent spends the first 10 min introducing the vocabulary needed to complete the word problems, providing students with the information on roots and affixes, and creating anchor visuals for the word SUBtract and FRACtion. Then, Mr. Shoro models how to highlight the key words in a problem on the projector and references the visuals Ms. Kent used. She walks around to support students in identifying the keywords and provides specific prompts to targeted students to look for the root. Next, Mr. Shoro models how to complete the word problem as Ms. Kent references the vocabulary anchors. Mr. Shoro engages in a think aloud for solving the word problem, gives students an opportunity to share their thinking, and places a second problem on the screen for students to solve. Ms. Kent models highlighting the keywords, referencing the word roots, and gives students time to solve the problem. Mr. Shoro and Ms. Kent each go around the room to provide additional support to students and Mr. Shoro writes the names of students he wants to pull into a small group on a sticky note. Ms. Kent exits to her next group, and catches up with Mr. Shoro at their next planning time.

# Station Teaching

In station teaching, two educators deliver separate content at separate stations, or centers during an instructional period (Friend, 2008). Station teaching may be implemented best during classroom center rotations in which students are required to attend all stations, or students attend a subset of stations each day (e.g., literacy centers). In this model, students move through various stations or centers as each educator carries out a lesson or activity at their respective station (Friend, 2008). Students may move through each station, or station schedules may be tailored to student choice or individual need. This model offers a low teacher to student ratio, increased opportunities to respond, and integration of each teacher's style of teaching. Station teaching also allows flexibility in how students are grouped (i.e., heterogeneous or homogeneous; Friend, 2008).

<b>Teaching Partner</b>	Mr. Evans	SLP	Ms. Jefferson
Grade Level	first	Days and Time of Centers with SLP	Tuesday/Thursday 1st center rotation
Lesson or Activity Objectives Specific to each group: on group	p-level plans (word work/comprehension br	rief goal on guided reading	center station by group
Targeted Students	Cardi, Jack	Frequency of Therapy	30 min 2x/week
Transition Procedure Transition song cues start of cer	nters; visual timer on board cues rotation be	tween centers	
Stations	or Groups (note if content changes for a	station for a specific grou	p)
Station Phonics	Station Guided reading	Station Technology	Station Read to self
Lead SLP (speech therapy) Teacher (phonics)	<b>Lead</b> Teacher	Lead Teacher	<b>Lead</b> Teacher
Content (SLP) Phonemic awareness Phoneme deletion	Content Red: diagraphs; problem/solution Blue: r-controlled vowels; inferencing Green: CVC words; check for meaning	Content AIMSweb <sup>©</sup> program	Content Fluency and comprehension
Content (Teacher) Words Their Way <sup>©</sup> word sorts by group (sort checked at beginning of guided reading)	Yellow: CVCe words; text-to-text connections	Phonics	
<b>Data</b> Trial-by-trial % correct	Data	Data Data collected in app	Data reading response journal
Plan review date		1	I

**Figure 1.** A sample station teaching lesson plan template. *Note.* SLP = speech-language pathologist; CVC = consonant-vowel-consonant.

Station teaching can include the SLP running a specific small group during ongoing classroom centers alongside teacher-led, paraprofessional-led, and/or independent tasks to teach phonological awareness (Hadley et al., 2000), story elements (Gillam et al., 2014), or to deliver an intensive reading intervention (Drew, 1998) to a small group of students. Small group frequencies can include groups that meet for 2 to 3 times a week for 25 to 30 min, following typical delivery of therapy services (Gillam et al., 2014; Hadley et al., 2000).

Considerations. Considerations for using station teaching include environmental arrangements to minimize noise, movement, and distractions (McLeskey et al., 2019). Station teaching may be a good choice for teacher and SLP pairs who are collaborating together for the first time, as direct delivery of instruction occurs separately (Friend

et al., 2010). Station teaching may also be a good choice if students receiving SLP services require a specific intensive curriculum such as an explicit reading intervention (Drew, 1998) or prerequisite skills delivered by the SLP (e.g., phonological awareness) can prime students to be able to access another center (e.g., guided reading with the teacher; Hadley et al., 2000). Teachers and SLPs may also select station teaching if the SLP is targeting skills of a small group of the class that may be more difficult to embed in whole group instruction (e.g., meta-cognitive verbs such as passive states of feeling or thinking; Gillam et al., 2014).

Logistical considerations such as classroom scheduling or management may also influence arrangement selection (Friend et al., 2010). Teaching new procedures or introducing new instructors to the classroom environment may be difficult or time prohibitive for a team. Capitalizing on

structures already in place in the classroom that allow for differentiated instruction to occur simultaneously such as classroom centers may support a new co-teaching team to try this approach. For example, trying station teaching during a preestablished small group time (e.g., classroom literacy centers) lends itself to two adults delivering instruction simultaneously without the need for creating new procedures. These logistical considerations may be particularly helpful if the teacher and SLP do not have a shared planning time or rely on email to collaborate or if the SLP delivers services 2 to 3 times a week for small increments of time (e.g., 20–30 min; Gillam et al., 2014) that could match preexisting classroom timing.

Example. Mr. Evans teaches first grade in a fully inclusive school. Two students in his classroom receive speech-language services from Ms. Jefferson to support their production of various speech sounds at the word and sentence levels. Ms. Jefferson is only available during morning literacy centers given the complexity of her caseload and all students receive speech-language therapy in the general education setting. She agrees these students would benefit from explicit instruction and practice in phonics as first-grade students, so she suggests they consider exploring co-teaching options to provide speech services during literacy centers to support students during ongoing literacy instruction.

Planning. Mr. Evans offers for Ms. Jefferson to use the second kidney table in his room for a speech center during literacy centers. As noted in their IEPs, the students will receive services for 30 min twice weekly in general education, so Ms. Jefferson will join centers on Tuesdays and Thursdays. After school, Mr. Evans and Ms. Jefferson look at the literacy centers plan (see Figure 1). Both agree station teaching is the best approach given only a small number of students need to access the speech center, and the two educators do not have common planning time. Centers are 30 min, so integrating a speech center fits during ongoing literacy center rotations. On days when Ms. Jefferson is not in the classroom, the students receiving speech therapy will engage in other literacy centers per their typical routine. Once the plan is set, the teachers agree to implement the plan and evaluate it in 2 weeks.

Implementation. Mr. Evans starts centers by sharing the schedule per his typical routine and plays the classroom transition song. Ms. Jefferson enters the classroom on Tuesday during the song and goes to the second kidney table where the word-work center is located. Mr. Evans engages in centers per his typical routine, seeing a group for guided reading at his small group table, monitoring students at the technology center, and observing students reading to self.

He delivers behavior-specific praise to students as they transition to centers and then teaches as he typically would during literacy centers.

The two students who receive speech and language therapy to support articulation and phonological processing goals are assigned the word-work center. Ms. Jefferson greets them and begins with a phonological language game targeting phoneme substitution skills. For example, Ms. Jefferson says, "Say /bat/. Now say /k/ instead of /b/." On the first trial, both students make errors, by fronting the velar /k/ as they say /tat/. Then, Ms. Jefferson shows them pictures: a bat, cat, and hat. She replays the trial with the visual supports and guides them to feel the difference between the *velar /k/* (i.e., back roof of the mouth) and the alveolar /t/ (i.e., front of the mouth just behind the teeth). Ms. Jefferson continues this activity for the duration of the center. When the timer rings to rotate centers, the two students check their schedule board and move to the next center. Ms. Jefferson collects her basket and exits the classroom. She emails Mr. Evans at the end of the day to share the students' progress and suggest some games for the families to practice at home. She repeats this procedure on Thursday.

## **Conclusion**

As classroom teachers are faced with increasing rates of students with LD to serve in the general education classroom, it is imperative they have the support and guidance needed to provide sufficient instruction. Co-teaching may be a particularly useful instructional strategy, especially for students with SLI who spend a large majority of their day in the general education classroom. Co-teaching partnerships that capitalize on the expertise of teachers and SLPs benefit students and teachers. The students receive tailored instruction in an authentic setting that can facilitate generalization of learned skills. Co-teaching can also help reduce the caseload burden on SLPs as they can more feasibly provide support to multiple students at once in the settings in which skills are designed to be applied.

## **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

#### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## **ORCID iDs**

Kathleen N. Zimmerman https://orcid.org/0000-0003-0271 -0965

Jason C. Chow https://orcid.org/0000-0002-2878-7410

#### Note

 Examples are based on a fictionalized account drawn from the research literature and not based on actual people or events that were observed by the authors.

### References

- Archibald, L. M. D. (2017). SLP-educator classroom collaboration: A review to inform reason-based practice. *Autism & Developmental Language Impairments*, 2, 1–17.
- Bland, L. E., & Prelock, P. A. (1995). Effects of collaboration on language performance. *Journal of Children's Communication Development*, 17, 31–37.
- Bouck, E. C. (2007). Co-teaching . . . Not just a textbook term: Implications for practice. *Preventing School Failure*, *51*(2), 46–51.
- Chow, J. C., Morse, A., & Senter, R. (in press). Intentional collaboration with speech-language pathologists to support language outcomes of students with emotional and behavioral disorders. *Beyond Behavior*.
- Cirrin, F. M., Schooling, T. L., Nelson, N. W., Diehl, S. F., Flynn, P. F., Staskowski, M., Torrey, T. Z., & Adamczyk, D. F. (2010). Evidence-based systematic review: Effects of different service delivery models on communication outcomes for elementary school–age children. *Language, Speech, and Hearing Services in Schools*, 41(3), 233–264.
- Cook, S. C., McDuffie-Landrum, K. A., Oshita, L., & Cook, B. G. (2017). Co-teaching for students with disabilities: A critical and updated analysis of the empirical literature. In J. M. Kauffman, D. P. Hallahan, & P. C. Pullen (Eds.), *The hand-book of special education* (2nd ed., pp. 233–248). Routledge.
- Cramer, E., Liston, A., Nevin, A., & Thousand, J. (2010). Co-teaching in urban secondary school districts to meet the needs of all teachers and learners: Implications for teacher education reform. *International Journal of Whole Schooling*, 6(2), 59–76.
- Dove, M., & Honigsfeld, A. (2010). ESL coteaching and collaboration: Opportunities to develop teacher leadership and enhance student learning. *TESOL Journal*, *1*(1), 3–22.
- Drew, M. F. (1998). Speech and language therapist-teacher collaboration in a literacy summer school. *International Journal of Language & Communication Disorders*, 33(Suppl.), 581–586.
- Ehren, B. J. (2000). Maintaining a therapeutic focus and sharing responsibility for student success. *Language, Speech, and Hearing Services in Schools*, 31(3), 219–229.
- Farber, J. G., & Klein, E. R. (1999). Classroom-based assessment of a collaborative intervention program with kindergarten and first-grade students. *Language, Speech, and Hearing Services* in Schools, 30, 83–91.
- Friend, M. (2008). Co-teach! A manual for creating and sustaining classroom partnerships in inclusive schools. Marilyn Friend, Inc.
- Friend, M., & Bursuck, W. D. (1999). *Including students with special needs*. Allyn & Bacon.
- Friend, M., & Bursuck, W. D. (2019). Including students with special needs: A practical guide for classroom teachers (8th ed.). Pearson.
- Friend, M., Cook, L., Hurley-Chamberlain, D., & Shamberger, C. (2010). Co-teaching: An illustration of the complexity of

- collaboration in special education. *Journal of Educational and Psychological Consultation*, 20(1), 9–27.
- Giangreco, M. F. (2000). Related services research for students with low-incidence disabilities. *Language, Speech, and Hearing Services in Schools*, 31(3), 230–239.
- Gillam, S. L., Olszewski, A., Fargo, J., & Gillam, R. B. (2014). Classroom-based narrative and vocabulary instruction: Results of an early-stage, nonrandomized comparison study. *American Journal of Speech-Language Pathology*, 45, 204–219.
- Hadley, P. A., Simmerman, A., Long, M., & Luna, M. (2000). Facilitating language development for inner-city children: Experimental evaluation of a collaborative, classroom-based intervention. *Language, Speech, and Hearing Services in Schools*, 31, 280–295.
- Heisler, L. A., & Thousand, J. S. (2021). A guide to co-teaching for the SLP: A tutorial. *Communication Disorders Quarterly*, 42(2), 122–127.
- Hughes, C. E., & Murawski, W. A. (2001). Lessons from another field: Applying coteaching strategies to gifted education. *Gifted Child Quarterly*, 45(3), 195–204.
- Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004).
- Kaufman, S. S., Prelock, P. A., Weiler, E. M., Creaghead, N. A., & Donnelly, C. A. (1994). Metapragmatic awareness of explanation adequacy: Developing skills for academic success from a collaborative communication skills unit. *Language, Speech, and Hearing Services in Schools*, 25, 174–180.
- King-Sears, M. E., Brawand, A. E., Jenkins, M. C., & Preston-Smith, S. (2014). Co-teaching perspectives from secondary science co-teachers and their students with disabilities. *Journal of Science Teacher Education*, 25(6), 651–680.
- Koutsoftas, A. D., Harmon, M. T., & Gray, S. (2009). The effect of Tier 2 intervention for phonemic awareness in a Responseto-Intervention model in low-income preschool classrooms. *Language, Speech, and Hearing Services in Schools*, 40, 116–130.
- McGinty, A. S., & Justice, L. M. (2006). Classroom-based versus pull-out language intervention: An examination of the experimental evidence. *EBP Briefs*, *1*, 3–26.
- McIntosh, B., Crosbie, S., Holm, A., Dodd, B., & Thomas, S. (2007). Enhancing the phonological awareness and language skills of socially disadvantaged preschoolers: An interdisciplinary programme. *Child Language Teaching and Therapy*, 23(3), 267–286.
- McLeskey, J. M., Rosenberg, M. S., & Westling, D. L. (2019). Inclusion: Effective practices for all students (3rd ed.). Pearson.
- Miedijensky, S. (2018). Learning environment for the gifted—What do outstanding teachers of the gifted think? *Gifted Education International*, 34(3), 222–244.
- Murawski, W. W., & Swanson, H. L. (2001). A meta-analysis of co-teaching research: Where are the data? *Remedial and Special Education*, 22(5), 258–267.
- Murphy, A., Franklin, S., Breen, A., Hanlon, M., McNamara, A., Bogue, A., & James, E. (2017). A whole class teaching approach to improve the vocabulary skills of adolescents attending mainstream secondary school, in areas of

socioeconomic disadvantage. *Child Language Teaching and Therapy*, 33, 129–144.

- Pearl, C. E., & Miller, K. J. (2007). Co-taught middle school mathematics classrooms: Accommodations and enhancements for students with specific learning disabilities. Focus on Learning Problems in Mathematics, 29(2), 1–20.
- Pershey, M. G., & Rapking, C. I. (2003). A survey of collaborative speech-language service delivery under large caseload conditions in an urban school district in the United States. *Journal of Speech-Language Pathology and Audiology*, 27(4), 211–220.
- Scruggs, T. E., Mastropieri, M. A., & McDuffie, K. A. (2007). Co-teaching in inclusive classrooms: A metasynthesis of qualitative research. *Exceptional Children*, 73(4), 392–416.
- Silliman, E. R., Bahr, R., Beasman, J., & Wilkinson, L. C. (2000). Scaffolds for learning to read in an inclusion classroom. Language, Speech, and Hearing Services in Schools, 31(3), 265–279.
- Smith-Lock, K. M., Leitao, S., Lambert, L., & Nickels, L. (2013).
  Effective intervention for expressive grammar in children with specific language impairment. *International Journal of Language & Communication Disorders*, 48(3), 265–282.
- Throneburg, R., Calvert, L., Sturm, J., Paramboukas, A., & Paul, P. (2000). A comparison of service delivery models: Effects

- on curricular vocabulary skills in the school setting. *American Journal of Speech-Language Pathology*, 9(1), 10–20.
- Tremblay, P. (2013). Comparative outcomes of two instructional models for students with learning disabilities: Inclusion with co-teaching and solo-taught special education. *Journal of Research in Special Educational Needs*, 13(4), 251–258.
- U.S. Department of Education, Office of Special Education Programs. (2020). *Individuals with Disabilities Education Act (IDEA) database*. https://www2.ed.gov/programs/osepidea/618-data/state-level-data-files/index.html#bcc
- van Kleeck, A., Gillam, R. B., & McFadden, T. (1998). A study of classroom-based phonological awareness training for preschoolers with speech and/or language disorders. *American Journal of Speech Language Pathology*, 7, 65–76.
- Wallace, E. S., Senter, R., Peterson, N., Dunn, K. T., & Chow, J. (2021). How to establish a language-rich environment through a collaborative SLP-teacher partnership. *TEACHING Exceptional Children*, 54, 166–176.
- Wilson, L., McNeill, B., & Gillon, G. T. (2019). Understanding the effectiveness of student speech-language pathologists and student teachers co-working during inter-professional school placements. *Child Language Teaching and Therapy*, *35*, 125–143.