Entering the Digital Therapy Room

Best Practices for Telepractice Interventions With School-Age Clients

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School-based speech–language pathologists (SLPs) have been plunged into telepractice service delivery with the ongoing COVID-19 pandemic. However, this temporary shift to provide online instruction is not the same as fully implementing a telepractice service delivery model that is comparable with in-person service delivery. The purpose of this article is to provide the practicing SLP with a framework for delivering effective intervention services to school-age students with language impairments via telepractice. Within this framework, the SLP still must consider the available evidence base for an intervention and implement its core components, including repeated opportunities for skill and knowledge acquisition with sufficient intensity, systematic scaffolding, and an explicit focus (Ukrainetz, 2006a). Particular attention must be given to aspects of intervention planning, manipulation of the therapy context, collaboration with relevant stakeholders, specific intervention materials, and prompting because these are among the most likely to differ between the telepractice and in-person service delivery. We discuss these aspects and provide examples. **Key words:** *language interventions*, *school-age interventions*, *telepractice*

BRIEF HISTORY

It has been 45 years since the first documented speech and language interventions were delivered by telepractice. As early as 1976, speech–language pathologists (SLPs) provided these assessment and intervention services to U.S. veterans with neurogenic communication impairments such as aphasia and dysarthria (Hill & Theodoros, 2002; Mashima & Doarn, 2008). Indeed, many of the pioneering speech–language pathology telepractice services involved adult patients in the health care system. It was not until 1999 that references can be found to speech and language therapy services delivered to school-age children through telepractice (Forducey, 2006; Madsen & Rollings, 2005). In the 21 years since, the American Speech-Language-Hearing Association (ASHA) has provided guidance on the delivery of telepractice services including a position statement, resources, and an outline of ethical considerations and roles and responsibilities (Brown, 2011). A complete review of this guidance is readily available for the interested reader (see ASHA, 2021c; Grogan-Johnson, 2018; Towey, 2012). At the core of ASHA's guidance is the requirement that telepractice services be equivalent to the quality of services provided in person (ASHA, 2021c).

To determine this equivalency for school-age students with communication impairments, there has been sustained growth in

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the number and quality of studies investigating the telepractice speech and language therapy service delivery model. In fact, two systematic reviews were completed pertaining to this service delivery model within school-based settings. In their review and meta-analysis, Rudolph and Rudolph (2015) identified six published reports that met the criteria for inclusion in their analysis. They posited that telepractice is a promising service delivery model for school-based speech and language intervention but stated that sufficient evidence is lacking to confirm equivalent outcomes for telepractice and in-person intervention. Wales et al. (2017) identified seven published studies for inclusion in their systematic review. They concluded that participants made significant and similar amounts of improvement for both in-person and telepractice service delivery models, suggesting promising but limited evidence to support telepractice. Findings of both reviews recommended more robust research studies with larger sample sizes and more rigorous study designs to support the efficacy of telepractice for school-age students.

Recently, Coufal et al. (2018) responded to this recommendation by conducting a large-scale intervention study involving 1,331 students with speech sound disorders receiving services through a traditional in-person service delivery model and compared them with 428 students with speech sound disorders receiving services through a telepractice service delivery model. In addition to the larger sample size, these researchers were able to improve scientific rigor by using two independent cohorts of subjects and comparing their performance using a common metric, the ASHA K-12 Schools National Outcomes Measurement System (NOMS; ASHA, 2003). The NOMS database reports descriptive student information as well as measurements of student progress during a documented intervention period through the use of Functional Communication Measures (FCMs; Gabel et al., 2013). These FCMs quantify changes in functional communication and swallowing over time instead of measuring specific goals of treatment or the specific outcomes of therapy techniques (Jacoby et al., 2002; Mullen & Schooling, 2010). Results of the comparison revealed no significant difference in intervention outcomes as measured by the FCMs, thereby suggesting equivalence between the two service delivery models.

In a follow-up study, Musaji et al. (2021) compared the results of in-person and telepractice service delivery for 6- to 9-year-old students with expressive or receptive language impairment using large independent cohorts of subjects and improving scientific rigor by again comparing performance using the ASHA K-12 Schools NOMS (ASHA, 2003). Sample sizes for students with expressive language impairment included 1,214 in the in-person condition and 408 for the telepractice condition. Sample sizes for students with receptive language impairment included 946 in the in-person condition and 254 in the telepractice condition. Results indicated comparable therapy progress in both conditions as measured by the ASHA NOMS FCMs. Currently available data suggest that speech and language interventions delivered using a telepractice service delivery model can and do effect meaningful changes for school-age students with communication disorders.

Although interest in telepractice has increased, implementation of the service delivery model in our profession was slow prior to the global COVID-19 pandemic. Tucker (2012) described a 2002 ASHA Membership Survey that reported only 11% of respondents used telepractice, with 43% interested in future use. The 2012 ASHA Membership Survey revealed a small percentage of members (2.3% of SLPs and 5.4% of audiologists) provided services via telepractice (Brook, 2012). However, a 2020 ASHA Survey of just school-based SLPs yielded a similar result, with less than 1% of respondents reporting using a telepractice service delivery model (ASHA, 2020). This slowed adoption rate was not unexpected, as a similar slowdown in adoption of telepractice occurred in many health care and health care-related

disciplines. Most commonly reported reasons for lack of adoption include lack of technology training, resistance to change, cost of implementation, reimbursement levels, and age and degree of patient education (Kruse et al., 2018). Additional reasons for the slowed adoption specifically related to speech–language pathology include claims from SLPs that it is not possible to provide speech–language services effectively without physical, in-person interactions. Additional concerns include the validity of conducting assessments by telepractice, whether SLPs can establish client rapport with this service delivery model, and whether therapy is as effective via telepractice as it is in person (Tucker, 2012).

CURRENT STATUS OF SPEECH AND LANGUAGE SERVICES VIA TELEPRACTICE

With the onset of the global pandemic, school-based SLPs who were already wrangling with concerns about the telepractice service delivery model were thrust into implementation without the training that is a critical component of integrating new technologies (Grogan-Johnson, 2021). Foundations of adequate telepractice service delivery such as access to computers and reliable internet connections, a distraction-free environment, and access to adult facilitation and support for young clients, which were available in research studies investigating this service delivery model, were not consistently available to practicing SLPs charged with continuing to provide speech and language therapy services during the pandemic (Sylvan et al., 2020; Tambyraja et al., 2021). In addition, many SLPs reported facing additional personal and professional stressors related to navigating their careers and family life during the pandemic (Sylvan et al., 2020). A natural reaction to such a sudden change is a sense of disorientation and a tendency to find fault with the technology or service delivery model. Venus et al. (2018) suggest that, when faced with the necessity of change, efforts

must be made to include a "vision of continuity." In other words, during significant change (like the current surge in telepractice), it is essential that the foundational elements of our practice, "what makes us who we are," are preserved. This advice will be helpful as we transition out of the pandemic and return to more in-person service delivery, though it is likely that telepractice use will continue at levels higher than those reported prepandemic. As we move out of the pandemic and move forward with increased use of telepractice, how should we proceed? In this article, we address this question by identifying core considerations for implementing telepractice services. We take the opportunity to share what we have learned from our experiences during the pandemic as well as the evidence-based practices documented for providing impactful language intervention for school-age students that serve as the foundation for high-quality service delivery, regardless of mode.

GOING BACK TO OUR FOUNDATIONS

The differences between in-person and telepractice service delivery may seem insurmountable. It is helpful to remember that telepractice is simply a method or mode for delivering evidence-based practices (EBPs). Therapists must consider the foundational components of EBPs, including clinical expertise, internal and external evidence, and child and caregiver perspectives when making clinical decisions, regardless of the service delivery model (ASHA, 2021b). When providing language interventions via telepractice, SLPs must rely on these same EBP principles just as they would during in-person service delivery. Using the components of EBP ensures that clinicians make informed and appropriate decisions regarding their client's plan of care. This entails considering client needs, researching relevant literature on the language disorder and potential interventions, and consulting with children and their families to determine their values and needs (ASHA, 2021b).

Despite continued and growing research, the field of speech–language pathology does not always provide therapists with a strong evidence base of effective interventions for all aspects of language functioning (Cirrin & Gillam, 2008). This holds true for all service delivery models. In circumstances where the empirical evidence base may be lacking, clinicians must consider the elements of their language interventions that make them therapeutic and likely to increase client progress (Ukrainetz, 2006a). Ukrainetz offers a helpful mnemonic, RISE, to assist SLPs in planning language interventions, no matter the existing evidence base. RISE represents the following elements of effective language intervention: **R**epeated opportunities, provided with sufficient **I**ntensity, that are **S**ystematically supported, and accompanied by an **E**xplicit skill focus. This mnemonic puts forth a set of characteristics that should accompany all language interventions, regardless of the specific knowledge or skills being targeted. By methodically addressing each of the components of RISE (Ukrainetz, 2006a), the therapist ensures that service delivery focus remains on teaching language competence rather than simply providing a series of activities. As SLPs transition to telepractice and plan interventions, it is helpful to incorporate these principles to provide effective services.

Considerations for selecting the telepractice service delivery model

Telepractice is one among several service delivery models (e.g., pullout, consultation, classroom collaboration) and offers great potential to assist a wide variety of clinical populations (Theodoros, 2011). As with all service delivery models, therapists must use their clinical reasoning to determine whether telepractice is appropriate for their individual clients and whether they possess the resources and knowledge base to implement the model effectively. Before implementing telepractice service delivery, the SLP must first ensure that it is permitted in their state and determine what regulations are in place to guide such practice. Clinicians can visit ASHA's (2021a) website, https://www.asha.org/advocacy/state/, click on their state, and navigate to the "telepractice" tab to find more information regarding these regulations. During the pandemic, state and national guidelines have been temporarily altered to facilitate widespread telepractice service delivery. It remains to be seen how regulations will be revised postpandemic. Next, therapists must consider their clients to determine whether characteristics such as sensory, motor, and cognitive abilities and/or the nature of the language disorder would preclude or prioritize using the telepractice service delivery model. Another consideration is available technology, including computers/tablets with web cameras and microphones, adequate internet connections to support reliable video and audio transmissions, and access to adult client support (e.g., access to e-helpers, ASHA 2021c). As a starting point, ASHA suggests a minimum of 3 MB upload speed for consistent videoconferencing with screen sharing (ASHA, 2021c). Finally, access to training resources, including training in technology and videoconferencing software, clinical workshops focusing on tele-interventions and tele-assessment, and professional learning opportunities centered on best practices for working with e-helpers, is another important consideration when selecting this service delivery model.

NUTS AND BOLTS OF TELEPRACTICE

Although in-person service delivery is the most often selected service delivery model, increasing access to language services for clients who are geographically remote or who experience mobility issues is a commonly identified rationale for selecting a telepractice service delivery model (Theodoros, 2011). Implementing telepractice along with other delivery models can increase flexibility for scheduling clients and providing a variety of individual and group intervention sessions. Anecdotes from school-based telepractitioners describe clients who prefer this service delivery model because it is more

engaging than in-person intervention and the SLPs themselves appreciate that it permits inclusion of children from different schools, maximizing service delivery efficiency. As with all clinical decisions, therapists must consider each of the relevant factors pertaining to their individual clients and work with them and their caregivers to find the most appropriate service delivery model to meet needs.

In all service delivery, regardless of mode, SLPs will engage children in individualized and skills-focused lessons, systematically provide supports, and progress monitor the children's growth. Each child's goals, the therapeutic techniques (e.g., focused stimulation, parallel talk, modifying linguistic input, modeling), and the use of reinforcement will remain similar no matter the service delivery model that is selected. Although there are some inherent differences between remote service delivery and in-person therapy, these differences are mainly attributable to the lack of in-person interaction and the reliance on technology that accompanies telepractice service delivery. Planning, manipulation of the therapy context, collaboration with relevant stakeholders, specific intervention materials, and prompting are among the most significant aspects that differ between the two service delivery models. In the following sections, these differences and how to accommodate them are discussed in greater depth.

Planning

Planning is key to successful therapy (Ukrainetz, 2006a). Moving from providing in-person services to telepractice does not negate the importance of careful planning. During the pandemic, SLPs on social media platforms reported selecting a website activity at the beginning of their workday and then utilizing the activity for all clients throughout the day. Although the adage "it's the therapy methods, not the materials" holds some truth, use of carefully selected activities and attention to planning should not be underestimated. Consider the following example:

A therapist has three clients, all of whom are working on using context clues to infer the meaning of unknown vocabulary words. The clinician has examined the current evidence base for teaching word learning skills and has selected a strategy that has documented efficacy in the published literature. In sessions, she will select Tier 2 vocabulary words from selected readings that she has received from the classroom teacher (Nelson & Van Meter, 2006). In this way, she works to connect the skill she is teaching in therapy to the classroom context to facilitate generalization. In addition, she will teach the students to engage in a self-talk strategy to promote the use of context clues (Nelson & Van Meter, 2006). The students will be instructed to identify words that they do not understand but can read from a passage while reading. The clients are then provided with systematic supports from the clinician to engage in self-talk to extract meaning from the word. Clients consider whether there are contextual cues from the passage to illuminate the word's meaning. In addition, they work with the clinician to examine the word root and bound morphemes in order to ascertain meaning. The first client is new to learning this strategy. Therapy is focused on teaching him to recognize when he encounters an unfamiliar word and the steps of the strategy that he will use to infer the word's meaning. The second client has practiced the strategy and is now attempting to use it to infer the meaning of new words in highly contextualized short passages. The third client has demonstrated high levels of accuracy using the strategy to infer the meaning of new words in context-rich passages. This client is working to generalize the skill she has learned in therapy to readings from the classroom that vary quite a bit in how much context they provide. During in-person sessions, it is likely that the three students would be presented with different materials reflecting their level of knowledge of the language task and their need for external support. It makes sense that remote therapy would follow this same path. Simply pulling up one activity, such as a Boom card deck (Boom Learning, 2021) with sentence-level context clues tasks, and using that activity with all three of these students is not individualized, nor does it effectively support the children in their varying levels of independence.

Telepractice requires the same amount of planning and attention to evidence-based principles as does therapy conducted in person. Perhaps, the major difference in

planning between the service delivery models is the substantial use of digital materials in telepractice sessions over tangible, printed activities often used within in-person sessions. When planning for services delivered via telepractice, it is important to remember that although the clinician always considers the service delivery model as part of planning, the child's needs are considered first. The SLP starts by examining the student's unique set of communication skills and uses their clinical reasoning to develop intervention techniques and activities that will best meet those needs (Dwight, 2015). Consider asking yourself these questions: What is it I am hoping to accomplish in therapy and what aspect of the client's communication system am I hoping to change? Then consider the levels of support they require, their learning preferences, and which evidence-based interventions will best address those communication needs. Once these items have been established, the SLP can find, create, or adapt materials to use in a digital form. In other words, plan the intervention first and then identify the activities to be used. In this way, we are simply transitioning evidence-based interventions from in-person sessions to digital formats suitable for telepractice, not devising entirely new interventions that are not linked to the EBP principles or the elements of RISE (Ukrainetz, 2006a). This ensures that telepractice sessions remain individualized and as effective as possible.

Manipulating treatment context

The contexts in which therapy is conducted also differ widely between service delivery models. In-person therapy lends itself well to classroom collaboration and "push-in" service delivery as clinicians are not physically remote from students and school staff. Conversely, telepractice frequently occurs in smaller group, "pullout" settings. The use of telepractice requires significant technology (ASHA, 2021c) and ample room for setup that may not be conducive to push-in service delivery. In addition, the noise level within the classroom may impact the clinician's ability to hear clearly when providing therapy services remotely. This is not to say that therapists cannot collaborate with teachers and other service delivery providers when developing student lessons and intervention plans, nor does it preclude SLPs from providing large group instruction during collaborative or parallel teaching with classroom teachers. Therapists using telepractice will find that, although the service delivery model can be utilized in a variety of settings, it will require thoughtful planning prior to implementation.

Therapists have long understood the importance of contextualizing language intervention when teaching communication skills. Research has supported the notion that teaching skills in isolation does not typically lead to generalization of skills or carry over to untrained environments (Ukrainetz, 2006a). There is, however, evidence to support the teaching and practice of language skills in meaningful contexts to facilitate generalization (Gillam & Ukrainetz, 2006). This can include the use of classroom reading materials, literacy-based units, and authentic activities. Contextualizing intervention moves beyond drill-like activities that are better suited for assessing skills rather than teaching them and gives students a naturalistic and meaningful context through which to practice their acquired knowledge and skills. Gillam et al. (2012) define contextualized therapy as interventions that have topic continuity across activities. For example, using a storybook in therapy to practice story retell and then using the same storybook to create activities that teach other language targets such as specific vocabulary and particular grammatical structures. The discrepancy between contextualized and decontextualized approaches can be observed when examining commercially available therapy activities. Often these activities lack continuity between therapy tasks and are best suited for discreet skills practice with high levels of repetition. Consider the following hypothetical activity:

A therapist is developing a lesson plan for his 5-year-old client to target answering wh-word questions. He finds a Boom card deck (Boom Learning, 2021) that he hopes will be fun and engaging. The activity consists of a question prompt at the top of the page ("Who is in the barn?") and four boxes from which the child can select an answer, each including a different animal in various locations. The client indicates her answer by clicking on the animal picture. The child then receives feedback from the therapist regarding her accuracy. The next slide contains pictures of household rooms (kitchen, bedroom, living room, etc.) one of which has a girl inside it. The question prompt now reads, "Where is the girl?" Once again, the child selects the appropriate picture from a field of four choices. This activity provides repeated opportunities for the client to demonstrate the targeted skill (i.e., answering wh-word questions) and may involve an explicit skill focus but does not provide systematic scaffolding to support student success (Ukrainetz, 2006a). In addition, the activity is highly decontextualized as it does not relate to a larger theme/unit meaningful for the child's educational attainment, nor do the task items relate to one another (e.g., the slide focusing on animals does not relate to the slide with household rooms).

When moving to the digital space, many therapists may turn to commercially available materials to save time and engage students in activities that appear fun and rewarding. Therapists should use their clinical judgment when determining whether an activity is in fact providing a meaningful context to practice the skill or acquire important knowledge. Therapists should reflect on the principles of EBP and RISE (Ukrainetz, 2006a) when considering the therapeutic context and manipulate the context as needed. Consider the previous example in which the SLP targeted wh-word questions with his client. A more contextualized approach may use age-appropriate books and classroom texts as a basis for practicing the language skill rather than using unrelated materials and activities. In addition, thematic units relating to classroom topics (e.g., seasons, ocean life) can be utilized to provide a more meaningful and authentic context for students to practice skills.

Activities should be structured in ways that allow for repeated practice opportunities of the target skill with adequate intensity (i.e., frequency of exposure; Ukrainetz, 2006a). An explicit focus is placed on the skills the client is expected to learn and use, and systematic supports facilitate client success with these explicitly stated language targets. Following are two examples of contextualized intervention that can be delivered by a telepractice service delivery model.

Literacy-based units

Literacy-based units involve the use of child-oriented texts, often selected from classroom reading materials, as the context for teaching specific speech and language skills. The text provides a common context for discussion across language activities as well as continuity of topic (Gillam et al., 2012). Oral narrative skills can be practiced and developed through literacy-based units along with a host of other language targets including phonological awareness, vocabulary development, grammar, and listening comprehension. Clinicians who utilize literacy-based units select books that represent a theme or language target that they wish to address in therapy. The story is then read to students, and the context of the story is used to create more specialized activities that focus on discrete language skills. The unit ends with a retelling of the original story or the creation of a parallel story. In this way, students are encouraged to integrate the skills they have learned, and the story provides a meaningful context for them to practice these skills. Gillam and Ukrainetz (2006) refer to this as a "whole-part-whole" framework, in which the whole is the authentic story context and the parts represent the smaller, skill-focused lessons. Of course, stories are only one genre of text that can be used in this way—informative (e.g., news articles, science reports, manuals) and persuasive (e.g., opinion editorials, policy documents, ads, and enlistments) texts also can serve as vehicles for literacy-based units.

Literacy units are readily adaptable for telepractice and can be used to target a variety of communication skills. Therapists can create multiple lessons to accompany the chosen text that can span several weeks of sessions, reducing the amount of time spent in therapy planning (Gillam & Ukrainetz, 2006). Activities can be easily adapted for children of different ages and tailored to target a variety of language skills. Literacy-based interventions are valuable treatment contexts as they not only support oral narration skills but also have impacts on written narratives and reading comprehension (Spencer & Peterson, 2020). Literacy units work well with larger groups of children in addition to small-group or one-on-one sessions. A wealth of children's literature can be accessed through digital library catalogues, storybook websites, or paid subscriptions to reading programs. Clip art can be purchased or images from the text may be used to create educational materials for personal use. When creating materials and adapting published works, it is important to consult regulations regarding fair use, copyright, and trademark in order to determine what is and is not permissible for educational purposes. Therapists can create slideshow presentations and games to target specific language skills such as vocabulary, grammar, or pragmatics. A parallel story can then be created to integrate the skills from the specific skill (part) activities. This can be done by inserting new images into the story to change components (e.g., characters, setting). In addition, digital therapy activities for books may be available for purchase (an example is provided in Case Example 1 later). Therapists should use their clinical judgment when evaluating these activities for relevance and breadth and, utilizing the current evidence base for literacy and language-based interventions, along with the elements of RISE (Ukrainetz, 2006a), ensures planned activities remain therapeutic.

Curriculum-based interventions

Curriculum-based interventions provide another method for tele-therapists to engage clients in meaningful learning activities. Curriculum-based interventions are described by Nelson (1989) as "the use of curriculum contexts and content for measuring a student's language intervention needs and progress" (p. 171). Ideally, curriculum-based language interventions are provided within the classroom setting (Bourque Meaux & Norris, 2018). However, tele-therapists can employ curriculum-based language interventions by incorporating elements of the student's curriculum into therapy sessions. This can be accomplished by using authentic reading materials and assignments from the classroom. Therapists can work with teachers to receive scanned copies of classroom materials (which can, as needed, be converted to editable documents) for use in therapy sessions. In addition, therapists can electronically send completed work samples and strategy suggestions to teachers after sessions are completed. Thematic units from the classroom (e.g., the solar system, branches of government, marine life) also can be used to target language skills while still tying into the larger context of the academic curriculum. The use of curriculum-based language interventions encourages frequent communication with teachers and can reduce planning time for clinicians. Since March 2020 at the beginning of the COVID-19 pandemic, many classrooms have shifted online for periods of time, which provides an opportunity for SLPs to engage in classroom lessons with their students. Therapists can work with both individual children and small groups during online class time in "breakout groups" within the online classroom platform. In addition, clinicians can collaborate with teachers who provide in-person lessons to offer whole-group lessons on a smart board, which are then followed up with small-group therapy activities, helping facilitate the transfer of skills and promote effective use of strategies. In this way, the classroom teacher and the SLP can work together to promote the development of language skills. To illustrate the benefits of contextualized interventions via telepractice, consider the

following case examples, with an eye toward the current evidence base and the elements of RISE (Ukrainetz, 2006a) that are or are not incorporated into the planned language interventions:

Case Example 1. Marci is a 7-year-old girl with a diagnosis of specific language impairment. She has recently begun receiving speech and language services that will be provided via telepractice. Her goals focus on improving her story recall of multi-episode narratives, specific grammatical targets (use of appropriate subject pronouns, possessive nouns, and subject–verb agreement), and making defensible inferences. The therapist plans three activities to target Marci's language goals. First, she selects a digital card deck from Super Duper Publications (Daymut et al., 2011) to target the subject pronouns "he" and "she." In the activity, there are various picture slides in which children are observed completing various activities (e.g., blowing bubbles) and a sentence strip is provided with the correct pronoun omitted (e.g., _____ blows a big bubble.). Marci is supposed to select the correct pronoun to correctly complete the sentence. The second activity planned involves a PDF file containing a picture of groups of children doing various tasks within a classroom. The therapist and Marci take turns creating sentences to describe the actions of the children. Here the focus is on using correct pronouns and the third person singular verb marker (e.g., "he writes," "she draws"). In the third activity, the therapist selects a worksheet from the No-Glamour Inferences workbook (Kanefsky, 2008). She and Marci work through the items using a targeted strategy in which Marci is taught to first think about what the book has told her and then to think about what she already knows to form inferences. A visual cue (i.e., a picture of a book and a picture of a thought bubble) will be used to prompt Marci as needed. The SLP attends to the number of opportunities Marci has to produce the targets and systematically prompts her with verbal and visual cues to ensure her success. However, these activities are highly decontextualized. They lack continuity of theme and do not relate to a larger context or one another. Consider the following more contextualized approach.

The clinician decides to address the same skills through a literacy-based unit. The unit starts with a reading of Goldilocks and the Three Bears (Davidson et al., 2008). The therapist will preteach vocabulary (e.g., plodded, naughty, cottage) and will highlight the story grammar elements as the story is read. Subsequent activities and rereadings will focus on addressing Marci's individual objectives but will relate back to the story. The following examples are adapted from a free Teachers-Pay-Teachers activity (Grogan-Johnson & Nicholson, n.d.). A pronoun game is created using characters and objects from the story. Marci and the clinician take turns requesting items for the story characters (e.g., "He wants his chair."). In addition, an interactive computer activity using story clip art is used to practice retelling all the narrative episodes, in which Marci acts out the story as she retells it, similar to a puppet show but with digital props. The clinician and Marci act out new vocabulary words and draw pictures depicting their meanings. At the successful completion of the lessons, Marci tells a parallel story in which she can integrate her newly learned skills. These lessons are in high contrast to the former decontextualized approach in which the therapist utilized unrelated activities to teach these skills.

Case Example 2. Adam is a 15-year-old student receiving speech and language services under the IDEA (U.S. Department of Education, 2018) disability category of intellectual disability. Adam engages well with others in daily social contexts about familiar topics such as sports, pop culture, and family. He struggles to discuss academic topics, however. His speech and language goals focus on improving his ability to summarize what he has read, increasing his use of temporal and causal conjunctions in his oral expression and writing, and using strategies to effectively define content-related vocabulary. A more decontextualized approach to Adam's distance therapy sessions may focus on activities related to sentence combining, use of graphic organizers to summarize short paragraphs, and vocabulary worksheets using Tier 2 words. Although Adam is likely to show improvement, a contextualized approach will help him generalize his skills outside of the teletherapy context. To consider the curriculum, the therapist reaches out to the teacher and learns that the class is learning about environmental issues such as pollution, climate change, and pesticides. In class, they have briefly discussed the Great Pacific Garbage Patch (National Geographic, n.d.), which has peaked Adam's interest. The therapist decides to explore this topic with Adam as an inquiry unit, in which he will research the topic and present his

findings to the class. Adam and the teacher identify readings and videos relevant to the topic that are then reviewed in telepractice sessions. Adam practices his summarizing strategies for each of the sources and discusses his findings and understandings with the therapist. Additionally, Adam and the SLP work to create clear definitions for novel terms relevant to the topic (e.g., microplastics) and practice sentence combining techniques to explain cause and effect relationships related to the topic. Throughout these activities, the clinician ensures that the focus remains on teaching and developing language skills in a meaningful context, not simply completing the assigned activities. The therapist incorporates the elements of RISE (Ukrainetz, 2006a) to ensure that Adam is supported in acquiring the targeted skills and strategies.

Collaboration

Because of the remote nature of telepractice, therapists may report feelings of isolation or disconnectedness from fellow professionals and families (Grogan-Johnson, 2012). This is particularly true when telepractice services are provided directly to a school building. Collaborations with faculty and staff that naturally and spontaneously occur in person within the teacher workroom or hallway do not regularly occur with a telepractice service delivery model. Caregiver contact is likely to be even more of a challenge when services are in a school context; for clients who receive telepractice services in their home, therapists may experience greater interaction with families because parents or caregivers may be logging into the sessions with their children and thus weekly consultations can take place during that time. Therapists must be proactive in how they engage with teachers and family members (Grogan-Johnson, 2012). Creating contextualized interventions is heavily reliant on consistent communication with the child's teachers and caregivers. In general, it is important to establish regular and frequent communication with stakeholders, through email, phone calls, text messaging, and videoconferencing (Grogan-Johnson, 2012). Establishing consistent lines of correspondence encourages regular communication and helps alleviate some feelings of disconnectedness that tele-therapists may experience. In addition, weekly therapy notes such as "exit slips" can be sent home with students receiving services through school, detailing the targets addressed and progress observed during that week's sessions. These notes also can be sent to the classroom teacher along with suggestions for how the teacher can support carryover of skills. For clients seen within the home context, weekly emails can be sent to caregivers as well to provide home practice activities, therapy progress updates, therapy appointment confirmations, and so on. Apps such as *Remind* (Remind, n.d.) can be used both to communicate individually with families and to send mass messages to families on the SLP's caseload. In general, it takes time to establish clear and open lines of communication, but with effort and perseverance, clinicians can increase feelings of connectedness with other intervention team members (Grogan-Johnson, 2012).

Materials

Perhaps the most challenging change for SLPs transitioning to telepractice is the difference in therapy materials. During the COVID-19 pandemic, therapists rushed to quickly transition to telepractice service delivery and it is likely that many of them felt that they were starting over again to develop activities and find suitable materials. Although the evidence base and the therapeutic purpose of the activity remain the same, the presentation of the activity will differ between the two service delivery models. In-person therapy employs a wide variety of materials such as games, workbooks, curriculum-based lessons, and literacy-based units. Although some of these materials may be in a digital format, most will be printed and thus can be held, manipulated, and physically stored. Telepractice also can incorporate the same kinds of materials, but they will be in the form of websites, PDFs, slide show presentations, online

game apps, and word processed documents. Therapists will find that developing telepractice activities and building a "digital materials shelf" take time as they look for new materials or adapt/convert activities they already use.

Many therapists at the onset of the COVID-19 pandemic reported feeling undertrained and underprepared to offer remote services (Sylvan et al., 2020). To implement online services, many therapists selected low-prep game-based websites or premade digital materials. Recent surveys have indicated that during this time, many therapists turned to social media posts and blogs for intervention ideas and support (Sylvan et al., 2020). Recall the previously mentioned scenario, in which therapists reported selecting one website game at the start of the day and using it for all their clients. Although therapists are resourceful and understandably use activities for multiple individuals with small adjustments, this approach to intervention is limiting. This practice may better reflect the need of SLPs to provide interventions during the pandemic rather than best practice or EBP. Table 1 provides examples of materials for language-based intervention delivered by telepractice that can help clinicians develop a digital materials shelf.

Frequently, in-person therapy sessions include hands-on, interactive activities that engage students' senses during the learning process. Such activities hold students' attention (Farrell & Cushen White, 2018) and honor students' individualistic learning preferences. These hands-on activities can be incorporated into telepractice sessions as well. For some individuals, pencil-and-paper tasks are preferred over typing and can be more time-efficient. Therapists can work with families and e-helpers to provide students with pencil and paper so that they can engage in writing tasks and then the students can hold their written text up to the camera for the therapist to read or the facilitator can send pictures of the completed work samples to the therapist. This same idea can be applied to drawing activities, note-taking, and other writing tasks such as pictography. Pic-

tography (Ukrainetz, 2006b) involves the use of simple line drawings to represent important elements of a story while the text is read. The student sketches these drawings and then uses them to aid recall of the story (Ukrainetz, 2006b).

The use of hands-on methods does not only include writing/drawing activities. Children may use coloring sheets or tally counters to keep track of the number of trials they have successfully completed during structured activities such as practice drills. Pacing boards can be used during phonological awareness and production activities, and children can be encouraged to use tapping or finger snaps to mark syllables, etc. Hands-on science experiments (e.g., pop rocks in soda) and crafts also are ways to engage children in language learning through multisensory activities. As with in-person therapy, therapists will take care to consider the elements of RISE (Ukrainetz, 2006a), ensuring that activities provide ample opportunities to elicit the language targets with adequate intensity, are systematically scaffolded, and have an explicit skill focus.

Some clients benefit from the tactile nature of hands-on learning, such as individuals with sensory impairment (Davis & Hopwood, 2002). Story boxes are one example of how clinicians can incorporate multisensory hands-on activities for clients during telepractice sessions. Story boxes are containers that include small objects that correspond with things in the story being read (Drissel, n.d.). Therapists can work with families to gather real objects or toys to create story boxes. Children can use these objects to aid their recall of the story and sustain their engagement. For example, when reading *Goldilocks and the Three Bears* (Davidson et al., 2008), the e-helper may provide the child with a spoon, a dollhouse chair, and a small pillow. These items are explored by the child and serve as story grammar markers. On a similar note, SLPs can work with the e-helper to gather materials to make describing ropes such as those used in the *Expanding Expression's Tool Kit* (Expanding Expression, n.d.) or story retell ropes (Reading Rockets, n.d.) in

Table 1. Resources for telepractice

Online Books

Therapists can access books online through e-book formats, websites offering leveled reading materials, video streaming sites, or their local library. In addition, here are several websites that offer free access to books and articles:

Epic Books: https://www.getepic.com/

Read Works: https://www.readworks.org/

Vooks: https://www.vooks.com/

Newsela: https://newsela.com/

Annotation

Teach specific language skills with the aid of annotation tools. Digital textbooks or scanned worksheets, homework, or class assignments can be shared during the therapy session and annotation features built into the videoconferencing software can be used to draw, type, stamp, edit, and highlight the material being shared. Most videoconferencing systems will have annotation tools built into them. If a system does not, therapists can download an annotation app such as Kami (2021) to allow for annotation on materials.

Kami: https://www.kamiapp.com/

Interactive Games and Language Activities

Interactive materials can be accessed through a variety of educational websites. Activities can be chosen that elicit specific speech or language targets or be used as reinforcers. Some examples are provided as follows:

Boom Learning: https://wow.boomlearning.com/

Example: https://wow.boomlearning.com/deck/the-three-bears-fun-pack-amTCWXaLbKoZf9QZt

ABCYa: https://www.abcya.com/

Example: https://www.abcya.com/games/make_a_face

Highlights: https://www.highlightskids.com/

Example: https://www.highlightskids.com/games/hidden-pictures/going-for-walk

Kids Discover: https://online.kidsdiscover.com/

Example: https://online.kidsdiscover.com/unit/solar-system/topic/a-spin-around-the-solar-system

National Geographic Kids: https://kids.nationalgeographic.com/

Example: https://kids.nationalgeographic.com/games/funny-fill-in/article/dreaming-green

Video Streaming

Video streaming sites can be used to engage clients and provide opportunities to elicit and practice language. Short videos can be used to practice summarization, elicit language samples, or augment written materials. Wordless animated video shorts, news clips, and educational videos can all be used as part of language intervention. Some examples include the following:

National Geographic Kids: https://kids.nationalgeographic.com/videos/topic/weird-but-true-shorts

YouTube: https://www.youtube.com/watch?v=nYTrIcn4rjg

Nightly Kids News: https://www.nbcnews.com/nightlykids

Green Screens

Green screens can be used to create interactive and visually engaging backdrops behind the clinician. Clinicians can use Velcro pieces on the backdrop to interact with the green screen as part of therapeutic activities. These activities work well for younger clients, yet they do require setup on the part of clinician. A quick internet search for "SLP green screen" will yield tutorials, examples, and activities/kits for purchase, such as these:

Tutorial: https://www.youtube.com/watch?v=QoKtq6dn_0Y

Activity Examples: https://www.teacherspayteachers.com/Browse/Search: green+screen+activities/Price-Range/Free/PreK-12-Subject-Area/Speech-Therapy

Slideshow Presentations

Slideshows can be used in edit mode to allow clients to move clip art or therapy stimuli around on the screen. In addition, materials can be viewed in presentation mode and the annotation tools

(continues)

Table 1. Resources for telepractice (*Continued*)

> can be utilized. Game templates such as memory match also can be created in slideshow presentations using add-ons such as Lesson Pix (https://lessonpix.com/). Some examples include the following:
>
> Memory Match Template: https://www.teacherspayteachers.com/Product/MEMORY-GAME-TEMPLATE-Editable-PowerPoint-5804298?st=d829bb39ddcf13dc39618c8509444e40
>
> Room on the Broom Story Retell: https://www.teacherspayteachers.com/Product/Room-on-the-Broom-Story-Retell-2576518?st=b5f5c447edbbf16e961ed0bf10075d9d
>
> Subordinating Conjunctions Activity: https://www.teacherspayteachers.com/Product/Subordinating-Conjunctions-PowerPoint-and-Worksheets-2531296

which each piece represents a different item to be described or a story grammar element. The following case examples highlight how clinicians might incorporate hands-on materials and instruction into a telepractice session:

Case Example 1. Mark is a 5-year-old client with a diagnosis of autism spectrum disorder. Mark typically uses short utterances of two to three words. Often, his utterances lack a subject (e.g., "go home"). His therapist has written a goal to increase his utterance length, specifically his use of subject + verb + object sentence types. To address this goal, the clinician plans to use a visual board where the student can drag and drop each word of the sentence as a visual support. She will model with the board and encourage him to follow her lead. She decides to use a visual board activity that she found on a therapy materials website. When she instructs Mark to click on the picture cards and to drag them to the board to create a sentence (e.g., "She eats porridge."), she notices that he lacks the fine motor control to click on and move the pictures reliably. He frequently loses track of the computer pointer, resulting in time lost as she helps him reorient. The clinician may decide that the use of this type of support is not feasible because of the distance between her and Mark. In this situation, the therapist might work with an e-helper to develop a visual support that is on-site (e.g., the therapist could send a version for the helper to print out and then printed pieces could be used to complete the activity). In this way, the therapist honors Mark's needs without making sacrifices to the therapy plan due to technology restrictions.

Case Example 2. Sasha is an 11-year-old girl with traumatic brain injury secondary to a seizure disorder. For Sasha, story retell is difficult. When asked to retell a story, Sasha has difficulty sequencing the elements and recalling the different events. Using a graphic organizer as a visual cue has not been beneficial for Sasha. She often loses track of where she is in the story and has difficulty remembering which element to include next. It may be beneficial to incorporate hands-on activities to stimulate her senses and improve her recall. This could be done through creating a story retell rope (Reading Rockets, n.d.) that allows her to keep track of where she is in the story with her hands. She also may benefit from pictography (Ukrainetz, 2006b) as described earlier.

Prompting

Many clinicians transitioning to telepractice express concerns regarding how best to provide client prompting. The physical distance between the clinician and the child impacts the types of cues that therapists can give. The use of touch or tactile cues is understandably restricted (Kester, 2020); however, the use of visual and auditory prompts remains similar across both remote and in-person therapy. Clinicians will find that for most clients, these types of prompts provide adequate support in sessions. In-person therapy sessions lend themselves well to the use of hands-on activities, manipulatives, and whole-body movement. Understandably, the provision of remote therapy presents therapists with challenges regarding how best to incorporate hands-on activities and multisensory learning techniques. Therapists may accommodate this by alternating digital activities with more traditional hands-on activities as appropriate. Consider once again the components of RISE, in which effective language interventions must provide clients with

systematic supports and prompting to scaffold client success. The use of verbal, visual, and auditory cues lend themselves well to telepractice, so therapists may attempt to use these types of cues initially and document client success. If clients respond positively, clinicians may not need to implement tactile cues. Therapists may supplement the absence of tactile cues by providing additional verbal, visual, and auditory cues (Kester, 2020). If hands-on cueing is necessary, therapists may instruct clients to provide themselves with their own tactile cues. For instance, the SLP might instruct the student to physically act out new vocabulary from readings (e.g., "plodding" on the floor). The SLP can act out the word as well on their side of the screen. Just as all cues and supports do not work with all clients, therapists will need to be flexible and creative when prompting clients.

CONCLUSION

In many ways, we are now at a professional crossroads. The American Speech-Language-Hearing Association asserts that the quality of services delivered via telepractice should be commensurate with those delivered in person (ASHA, 2021c). This position has significant implications for how clinicians plan for and implement telepractice interventions. Clinicians must consider not only the technological quality of their sessions (e.g., internet stability, access to high-quality microphones and cameras) but also the quality of the therapeutic interventions themselves. Just as novice clinicians begin to reevaluate their therapy as they gain experience and consider ways in which they can evolve their craft, therapists engaging in telepractice must continually push themselves to provide intervention services that embody the position of ASHA and the intent of SLPs devoted to using EBP. Accomplishing this requires therapists to hold on to the foundations of their clinical training and their knowledge of EBPs. In this way, therapists can provide effective interventions that move beyond simply engaging students to actually improving their communication, academic performance, and social functioning when operating within the telepractice service delivery model.

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