

Supplemental Material S4. Structure and definitions within the intervention taxonomy.

Aspect I Modality/Domain	
Note: Categories in Aspect I are the same as for Aspect I in the assessment taxonomy [Removed for peer review]	
Modality	<p>Spoken Language Language exchanged verbally, or via an alternative in situations where peers would typically use verbal communication (includes pre-linguistic communication). <i>Examples:</i></p> <ul style="list-style-type: none"> • <i>Intervention using a single mode of spoken communication (single-modality), e.g., Speech-only or AUSLAN.</i> • <i>Intervention using multiple modes of spoken communication (multi-modal), e.g., Key-word sign or Aided language stimulation.</i> <p>(American Speech-Language-Hearing Association, n.d.; Beukelman & Mirenda, 2013b).</p>
	<p>Written Language Language exchanged through text (print) or via an alternative in situations where peers would typically be reading or writing. <i>Examples:</i></p> <ul style="list-style-type: none"> • <i>Intervention targeting written communication via a single mode (single-modality), e.g., Text-only or Braille.</i> • <i>Intervention targeting written communication via multiple modes (multi-modal), e.g., Text with symbol support.</i> <p>(American Speech-Language-Hearing Association, n.d.; Beukelman & Mirenda, 2013b).</p>
Domains	<p>Semantics Understanding and expression of words and word meanings (e.g., vocabulary, word retrieval, lexical meaning). <i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child learns to define the meanings of, and use, a variety of adjective words for improved narrative retelling.</i> • <i>A child learns to identify the meaning of ‘exam instruction words’ (e.g., analyze, contrast, explain, define, summarize etc.) for improved comprehension of written instructions in class.</i> <p>(American Speech-Language-Hearing Association, n.d.; Beukelman & Mirenda, 2013b; Boyle et al., 2007).</p>
	<p>Morphosyntax Understanding and expression of different word forms and the order and combination of words in sentences. <i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child explicitly learns and practices production of past tense verb forms whilst retelling an event.</i> • <i>A child practices producing complex sentences with conjunctions (e.g., because, if, when).</i> <p>(American Speech-Language-Hearing Association, n.d.; Beukelman & Mirenda, 2013b; Boyle et al., 2007).</p>

Domains	Social Abilities and Discourse	<p>Giving and making meaning in social context or communication for social purposes. Includes:</p> <ul style="list-style-type: none"> - Pre-linguistic communication: e.g., facial expression, joint attention, gesturing. - Communication intentions/purposes: e.g., requesting, commenting, greetings, asking questions, giving reasons, making predictions. - Non-verbal communication: e.g., understanding body language and facial expressions. - Non-literal language: e.g., inferences, idioms, metaphors, jokes, sarcasm. - Matching communication style to social context: e.g., adjusting communication style between friends and teachers. - Conversation conventions: e.g., topic selection and maintenance, conversational turn taking. - Text cohesion: e.g., verbal fluency (mazes and incomplete sentences), transitions between sentences/paragraphs. - Text organization (discourse or macrostructure): e.g., Narrative structure, episodic structure. <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child learns to use symbols to communicate for a range of communicative functions.</i> • <i>A child learns to stay on topic and take turns in conversation.</i> • <i>A child learns to sequence information in order and follow genre-specific conventions (story grammar) when telling a narrative.</i> <p>(American Speech-Language-Hearing Association, n.d.; Beukelman & Mirenda, 2013b; Boyle et al., 2007).</p>
	Meta-Language	<p>Ability to think about own thought processes and understand how to regulate these processes for effective learning. Includes:</p> <ul style="list-style-type: none"> - Meta-cognition: Knowledge and use of strategies for managing and own learning. - Meta-language: Knowledge of phonemic (phonemic awareness), morphological/syntactic (meta-syntactic) or text-level (meta-narrative) rules in relation to own skills; and ability to effectively apply these rules for improved performance. - Meta-pragmatics: Knowledge of social conventions in relation to own communication and ability to apply this knowledge to improve communication with others. <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child explicitly learns to identify and implement strategies that facilitate their own learning or performance, e.g., “It helps me find and correct grammatical mistakes when I read my written work aloud to myself” (meta-cognitive).</i> • <i>A child explicitly learns about the phonological structure of words (phonological awareness skills) by segmenting words into sounds (meta-language).</i> • <i>A child’s meta-pragmatic skills are assessed by asking the child to describe what they would do in a social situation and why (meta-pragmatics).</i> <p>(American Speech-Language-Hearing Association, n.d.; Larson & McKinley, 2003; Law et al., 2008).</p>
	Executive Functions	<p>Collection of related cognitive processes necessary for execution of goal-directed, controlled, purposeful behavior. Includes:</p> <ul style="list-style-type: none"> - Inhibition (self-control): Ability to focus and attend to tasks through suppression of inappropriate thoughts, comments, and behaviors. - Emotion control (self-regulation): Ability to manage emotions for task completion. - Working memory: Ability to retain, process and manipulate pieces of information for short periods of time to complete required tasks. - Organization: (strategic planning) Ability to use organizational strategies for task completion, e.g., envisioning the end product, planning steps to complete tasks, and identifying solutions to problems. - Mental flexibility: Ability to integrate prior knowledge and experiences or effectively apply of different rules for different situations. - Sustained attention: Ability to maintain attention to tasks despite distractions or fatigue. <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child explicitly learns and practices skills for successful project completion, e.g., forming a plan, identifying project stages, identifying/collecting materials needed, implementing the plan, checking progress according to plan (organization and self-regulation).</i> • <i>The length of time for which a child stays focused on task is gradually increased each day, with prompts also faded over time (sustained attention).</i> <p>(Dawson & Guare, 2015; Henry et al., 2012; Singer & Bashir, 1999; Ukrainetz, 2006; Wolter, 2007).</p>

Comprehension or production	Comprehension	Understanding of information, knowledge and ideas communicated by others (includes verbal and non-verbal). <i>Examples:</i> <ul style="list-style-type: none">• <i>A child learns to follow multi-step verbal directions with spatial concepts.</i>• <i>A child learns strategies to improve reading comprehension.</i>• <i>A child learns to understand emotions conveyed in the facial expressions of others.</i> <hr/> <i>(American Speech-Language-Hearing Association, n.d.; Boyle et al., 2007; Law et al., 2003).</i>
	Production	Ability to convey information, knowledge, and ideas to others (includes verbal or non-verbal) <i>Examples:</i> <ul style="list-style-type: none">• <i>A child learns to produce complex sentences with coordinating conjunctions.</i>• <i>A child learns strategies to improve spelling of words.</i>• <i>A child learns to use vocalizations to intentionally communicate basic wants and needs.</i> <hr/> <i>(American Speech-Language-Hearing Association, n.d.; Boyle et al., 2007; Law et al., 2003).</i>

Aspect II Intervention Purpose	
Purpose	<p>Skill Development Interventions aimed at improving communication by directly teaching skills that impaired or lacking (i.e., lessen the degree of disorder or remediate deficits associated with a condition). <i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child learns to correctly produce grammatical forms when describing pictures (development of syntax skills).</i> • <i>A child learns the skill of identifying sounds in words (development of meta-abilities, specifically phonemic awareness).</i> • <i>A child learns to identify the components contained in well-structured narrative stories and apply this structure to their own story writing (development of meta-abilities, specifically meta-narrative skills).</i> <p>(Justice & Redle, 2014; Paul & Norbury, 2012; Ukrainetz, 2015a).</p>
	<p>Strategy Use Interventions aimed at improving communication by teaching functional strategies. The intervention does not intend to directly alter the disorder but aims to teach use of strategies for more effective communication (i.e., compensatory strategies). <i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child learns strategies for identifying and managing communication breakdowns in conversation (strategy for managing difficulties with social abilities).</i> • <i>A child learns to use a thesaurus to increase the variety of vocabulary used in creative writing (strategy of managing semantic difficulties).</i> • <i>A child learns organizational strategies, such as referring to a list of items they need each day whilst packing bag (strategy for managing difficulties with executive functioning, specifically organization).</i> <p>(Justice & Redle, 2014; Paul & Norbury, 2012; Ukrainetz, 2015a).</p>

Aspect III Intervention Delivery	
Method	<p>Delivered by SLP</p> <p>Interventions primarily delivered by an SLP. These interventions may involve others as communication partners or include follow-up activities or homework delivered by others; however, the SLP is the primary person providing the intervention for the duration of the intervention block.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>Child receives weekly intervention conducted by SLP with home practice provided.</i> • <i>SLP works with a child in class each week to support understanding of curriculum vocabulary.</i> <p>(Boyle et al., 2007; Cirrin et al., 2010; Dickson et al., 2009).</p>
	<p>Delivered by Other</p> <p>Interventions primarily delivered by other people, e.g., parent, teacher, teacher-aide, other professional, therapy assistant etc. The role of SLP input is to train or support “others.” This may include providing training/coaching, giving instructions/advice, or supplying intervention materials. The SLP may also conduct intervention with the child for the specific purpose of modelling or demonstrating to those being trained. The level of SLP input may vary highly depending on the training needs or may vary over time, e.g., the SLP may have high input initially which then reduces as the “other” person becomes trained.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>In SLP sessions, the SLP specifically models and trains a parent to implement language stimulation techniques at home.</i> • <i>SLP provides teacher training on classroom strategies to facilitate improved learning of vocabulary words.</i> • <i>A teacher-aide delivers a manualized language intervention program to small groups of identified children.</i> <p>(Boyle et al., 2007; Cirrin et al., 2010; Dickson et al., 2009).</p>
	<p>Face-Face (only applicable to interventions delivered by a person)</p> <p>Intervention is conducted with the child and the person delivering the intervention in the same room.</p> <p><i>Example:</i></p> <ul style="list-style-type: none"> • <i>A child attends face-to-face intervention sessions with an SLP (or another trained person).</i> <p>(American Speech and Hearing Association, 2010; Molini-Avejonas et al., 2015).</p>
	<p>ICT (only applicable to interventions delivered by a person)</p> <p>Intervention is delivered with the child and the person delivering the intervention communicating through ICTs (information and communication technologies), e.g., videoconferencing, web-conferencing, telephone.</p> <p>Note: Technology that is not used for simultaneous two-way communication is not considered ICT.</p> <p><i>Example:</i></p> <ul style="list-style-type: none"> • <i>A child participates intervention sessions delivered via Skype or Zoom with an SLP (or another trained person).</i> <p>(American Speech-Language-Hearing Association, 2010; Molini-Avejonas et al., 2015).</p>
	<p>Software-based</p> <p>The intervention is predominantly a computerized process (i.e., App, web-based program, or computer program) with no (or very limited) input from a person. The software selects tasks, presents tasks and gives feedback. A person may set a child up with a computer or be present as adult supervision; however, the process is predominantly computerized. If a person is required to select tasks or provide specific feedback, then the intervention is not categorized as software.</p> <p><i>Example:</i></p> <ul style="list-style-type: none"> • <i>A child participates in intervention conducted by an App.</i> <p>(Knight et al., 2013; Pokorni et al., 2004; Ramdoss et al., 2011).</p>

Tier of support	Whole Class (Tier One)	Interventions delivered as (and suited for) whole class teaching, i.e., one adult per seven or more children. This may include interventions used to support universal design or curriculum differentiation. (Law et al., 2012; Sanger et al., 2012; Speech Pathology Australia, 2014).
	Small Group (Tier Two)	Interventions delivered as (and suited for) small group teaching, i.e., one adult for two-six children. This may include in-class focused support for small groups of “at-risk” children. (Law et al., 2012; Sanger et al., 2012; Speech Pathology Australia, 2014).
	Individualized (Tier Three)	Intervention delivered to an individual child. (Law et al., 2012; Sanger et al., 2012; Speech Pathology Australia, 2014).
Environmental context	Clinical context	Skills are learned in a clinical context, i.e., intervention does not incorporate materials or communication partners from day-to-day environments. Note: This category refers to the context being targeted in intervention, which may not be the same as physical location. <i>Example:</i> <ul style="list-style-type: none"> • <i>A child is withdrawn from regular classroom activities for narrative intervention conducted by an SLP using materials that the SLP has brought to the school.</i> (Fey, 1986a; McCauley et al., 2017).
	School context	Intervention occurs in a school (or Kindy) context, i.e., incorporates communication partners, communication situations, and materials that represent a school environment. Note: This category refers to the context being targeted in intervention, which may not be the same as physical location. <i>Examples:</i> <ul style="list-style-type: none"> • <i>An SLP explicitly teaches the sentence structures that a child will need to use to complete the assessment task for the current English unit of work at school.</i> (McCauley et al., 2017; Ukrainetz, 2015b).
	Home context	Intervention occurs in a home context, i.e., incorporates communication partners, communication situations, and materials that represent a home environment. Note: This category refers to the context being targeted in intervention, which may not be the same as physical location. <i>Example:</i> <ul style="list-style-type: none"> • <i>During an appointment in an outpatient clinic, an SLP trains a parent to support social skills whilst the child interacts with siblings in activities similar to the activities that occur at home.</i> (Fey, 1986a; McCauley et al., 2017; Paul & Roth, 2011).
	Other community context	Intervention occurs in a community context, i.e., incorporates communication partners, communication situations, and materials that represent a community environment. Note: This category refers to the context being targeted in intervention, which may not be the same as physical location. <i>Example:</i> <ul style="list-style-type: none"> • <i>An SLP assists a child learn to specific skills that are needed for a work experience placement, e.g., interacting with customers, writing down orders from the menu and counting money.</i> (Fey, 1986a; McCauley et al., 2017; Paul & Roth, 2011).

Aspect IV Intervention Form	
Task Type	<p>De-contextualized – Hierarchical</p> <p>Naturalness of communication: Discrete skills are targeted in highly structured tasks that are selected and directed by the adult, i.e., clinician-directed approach. Intervention sessions typically consist of a series of repetitive, drill-based tasks with minimal topic continuity between tasks. Games (or motivating tasks) may be used to make intervention entertaining; however, the target skills are not an inherent part of the game.</p> <p>Intervention structure: Skills are taught following a set (usually developmental) sequence, with progress to subsequent tasks dependent on mastery of previously targeted skills, i.e., bottom-up or deductive approach. Later stages may move towards more contextualized activities for generalization; however, the intervention initially teaches skills in de-contextualized tasks (this is unlike contextualized and activity-focused interventions which occur in naturalistic or real-life activities from the outset).</p> <p>Theoretical background: The underlying theory is that earlier developing skills should be taught first, and skills are mastered in highly structured situations before generalization to everyday communicative contexts.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>The communicative function of request-making is targeted in adult-directed, drill tasks designed for repetitive practice of "requesting" desired items/objects. Successive goals are introduced as previous goals are mastered.</i> • <i>A child develops phonemic awareness skills through a software program that presents sound identification and manipulation tasks in spoken single words (e.g., Tell us how many sounds you hear in the word "dog"). Tasks are presented in developmental sequence based on the child's success with previous tasks.</i> • <i>A child learns to produce sentences with conjunctions during a series of drill tasks using picture cards as stimulus. Comprehension is taught before production and earlier developing conjunctions are taught first, with later developing conjunctions targeted after earlier conjunctions have been mastered.</i> • <i>A child practices mnemonic strategies whilst repeating strings of random numbers or words. The length of the strings of numbers or words gradually increases in length over time.</i> <p>(Damico & Damico, 1997; Fey, 1986d; Gillam et al., 2012; Helland et al., 2011; Koole et al., 2015; Paesani, 2005; Ukrainetz, 2015a).</p>
	<p>De-contextualized - Non-Hierarchical</p> <p>Naturalness of communication: Same as for de-contextualized – hierarchical (see above).</p> <p>Intervention structure: A variety of skills are practiced without a defined teaching sequence or a plan for how skills combine, i.e., intervention does not follow a set developmental or hierarchical sequence.</p> <p>Theoretical background: The underlying theory is that practice of discrete language skills stimulates cognitive processing and leads to enhanced overall functioning.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>A child practices producing a variety of vocabulary words related to animals, people, and food in a picture naming task (and gets a turn at a game as a reward for naming each picture). Targeted words are not selected based on any defined sequence, topic, or developmental order.</i> • <i>A child practices following directions containing a variety of different concepts whilst playing a barrier game. Concepts are not selected based on any defined sequence, topic, or developmental order.</i> • <i>A child learns to explain what different idioms mean by turning over cards in a board game and explaining the meaning of the idiom written on each card.</i> <p>(Fey, 1986d; Gillam et al., 2012; Koole et al., 2015; Ukrainetz, 2015a)</p>

Task Type	Contextualized	<p>Naturalness of communication: Intervention activities are structured and directed by the SLP but occur in meaningful, natural interactions between the child and the adult, i.e., hybrid approach. Intervention sessions are centered on a topic, such as a storybook selected by the SLP, with topic continuity across activities within a teaching session.</p> <p>Intervention structure: Intervention may not be structured according to a hierarchical sequence, as the focus is on maintaining a meaningful context, i.e., top-down or inductive approach.</p> <p>Theoretical background: The underlying theory is that skills should be developed in naturalistic and meaningful contexts. Discrete skills may be targeted; however, focus remains on a communicative purpose, such as telling a story.</p> <p>Examples:</p> <ul style="list-style-type: none"> • <i>An art task is selected to target the communicative function of "requesting." The adult models appropriate requests whilst interacting with the child; sets up naturalistic situations where requests are needed (e.g., putting crayons out of reach); and provides scaffolding to assist the child to make requests.</i> • <i>In shared book reading (using specifically selected picture books) a child is supported to learn phonemic awareness skills, i.e., "sounding out" words from the book.</i> • <i>A parent models targeted sentence structures whilst building with Lego and encourages the child to produce targeted sentences structures by asking specially selected questions about the Lego.</i> • <i>A game of "Go-Fish" with an SLP is used for the purpose of practicing social communication skills such as turn taking and following rules in a game.</i> <p>(Fey, 1986c; Gillam et al., 2012; Koole et al., 2015; Ukrainetz, 2015a)</p>
	Activity-focused	<p>Naturalness of communication: Intervention occurs within the child's regular everyday activities or school curriculum, with adults responding to the child's communication by providing scaffolding and supports, i.e., child-directed approach. Skills are taught directly within the daily-life activities in which they occur, with focus on functional performance and use of skills needed to complete the activity. Where discrete skill acquisition occurs, this is directly linked to the specific activity being targeted.</p> <p>Intervention structure: Intervention targets are selected based on functional skills needed to complete an activity, rather than on a developmental or hierarchical sequence.</p> <p>Theoretical background: The underlying theory is that intervention should be directly aimed at facilitating participation, functional performance, or independence in everyday activities (activity and participation levels of the ICF).</p> <p>Examples:</p> <ul style="list-style-type: none"> • <i>During typical child-directed play at lunchtime, a child is supported (through scaffolding and prompting from an adult) to further develop social communication skills such as making appropriately requests for the ball, taking turns, and following rules.</i> • <i>Whilst completing a task based on the English unit of work at school, the child is supported to learn phonemic awareness skills, i.e., 'sounding out' words as they write them.</i> • <i>Whilst reading a factual report for a school assignment in class, a child learns to use a dictionary to understand the meaning of unfamiliar words.</i> • <i>When cooking a family meal at home, a child is supported to learn the meaning of vocabulary words in recipes, e.g., chop, whip, flip, sprinkle, sift.</i> <p>(Fey, 1986b; Hyter, 2003; Ukrainetz, 2015a; Westby, 2007)</p>

Aspect V Teaching Techniques	
<p>(Beukelman & Mirenda, 2013a, 2013b; Ebbels, 2007; Eisenberg, 2014; Embry & Biglan, 2008; Gillam & Loeb, 2010; Hegde, 2006; Hyter, 2003; Kaderavek, 2015; Kamhi, 2014; McClintock et al., 2014; Paul & Norbury, 2012; Proctor-Williams, 2009; Proctor-Williams & Fey, 2007; Reichow & Volkmar, 2010; Rosenshine, 2012; Roth & Paul, 2014; Smith-Lock et al., 2013; Smith-Lock et al., 2015; Snell et al., 2006; Starling et al., 2012; Warren et al., 2007; White et al., 2007)</p>	
Prompting techniques	<p>Time delay (expectant waiting) Waiting longer than is typical for a desired response (with no other prompts provided while waiting).</p>
	<p>Physical (tactile) prompts/cues Use of touch to prompt or cue a child to begin or continue a task, e.g., hand over hand manipulation for the child to complete a task or shoulder touch to prompt a response.</p>
	<p>Gestural prompts/cues Use of gesture or facial expression to elicit a target response, e.g., pointing to an object of importance; gesture to remind child of a required response.</p>
	<p>Visual prompts/cues Use of visual prompts or cues (pictures, symbols, or writing) to elicit a target response, e.g., provision of a picture to prompt production of a word; picture sequence to prompt retell of a story.</p>
	<p>Verbal (auditory) prompts/cues Use of a verbal prompt or cue to elicit a target response. This may include:</p> <ul style="list-style-type: none"> - Questions (open or closed): Use of questions to elicit a targeted response. The format of questions varies depending on the desired response, e.g., “What did the boy do yesterday? (to elicit a morphological form);” “Why did you choose that answer? (to elicit a demonstration of meta-awareness);” “Is the carrot orange or red?” (to prompt for additional information). - Suggestions (direct or indirect): May be a direct instruction regarding the expected response, e.g., “Use ‘ed’ at the end of the word.” Or an indirect ‘reminder’ of what is expected, e.g., “Remember that we are talking about something that happened yesterday.” - Cloze completion: Providing a word, sentence, or phase for the child to complete, e.g., “The boy is _____.” - Phonemic prompt: Use of an initial sound/syllable in a word to prompt a response, e.g., “A carrot is a type of veg...” or “The word starts with an ‘s’ sound.”
	<p>Modeling for Imitation Specific request/expectation for the child to produce (imitate) a response (verbal, written, symbolic or gestural) that has been explicitly modeled, e.g., “Say _____.” The imitation may be a direct or delayed; or may be a response to a predictable or scripted scenario.</p>
Linguistic techniques	<p>Modeling for Demonstration Deliberate presentation or model of an intervention target, without expectation of immediate response from the child. Demonstrations may be provided by:</p> <ul style="list-style-type: none"> - Adult modeling (either in real-time or through videorecording). - Peer modeling (either in real-time or through videorecording). Note: the presence of peers does not in itself constitute “peer-modeling” unless the peer has been deliberately primed or placed to provide modeling. - Video modeling (or video feed-forward): child’s response is recorded and then edited and corrected before playback to child.
	<p>Think Aloud Verbalization of the problem-solving processes or strategies involved in completing a task such as making predictions, decoding texts, summarizing information, editing, and writing, e.g., adult verbalizes the strategies used when an unfamiliar word is encountered in a text.</p>
	<p>Inflection for demonstration Demonstrational models in which deliberate stress is given to a target, e.g., “The boy walked” or “I hear a “sh” sound in the word SHell.”</p>
	<p>Focused contrast Deliberate comparing of incorrect response with a correct response, e.g., “We don’t say: ‘Yesterday this girl walk’; we say: ‘Yesterday this girl walked’ or “This boy called out in class, but he should have put his hand up.”</p>
	<p>Recasts/expansions Immediate repetition of the child’s utterance with correction or modification of a target word or structure, whilst maintaining the core meaning of the utterance.</p>

Regulatory techniques	Extensions	Immediate response to child’s utterance by the adding one or more linguistic forms to expand the complexity or meaning of the utterance.
	Explicit instructions	<p>Explicit instructions: Explicit instructions regarding the use of target forms, such as linguistic rules or social expectations are provided. Instructions may be provided as:</p> <ul style="list-style-type: none"> - Verbal (explicit) instructions: Verbal information is provided to make the child explicitly aware of the linguistic rules or features being taught, e.g., “If something happened in the past tense we say ‘ed’ at the end of the word” or “When a person answers the phone, you say hello first and then tell the person who is calling.” - Visual (explicit) instructions: Visual materials are used to explicitly explain the linguistic rules or features being taught, e.g., colors and shapes are used to visually describe grammatical elements in shape-coding intervention or pictures in social stories are used to visually represent a target behavior or concept.
	Relate content to past knowledge	Commenting on links or similarities between tasks or skills. For example: “The word ‘vague’ is similar to the word ‘uncertain’ that you learned last week”; “When you have something to say, you should wait until the other person has finished talking; just like in a game when you have to wait for the other person to have their turn before you have your turn.”
	Explanation of goals or expectations	<p>Learning intentions, goals or task expectations are described in an age-appropriate manner. Note: this is different to the technique “explicit instructions” (described above), because the explanations are about intervention goals or expectations rather than the communication rules/features being taught.</p> <ul style="list-style-type: none"> - Verbal explanation: Verbal information is provided to explain goals or expectations, e.g., “Today we are learning _____ and you will have learnt this when you can _____” or “When you have scored 20/25 or higher you will move onto the next task.” - Visual explanation: Visual information is provided to explain goals or expectations, e.g., Use of visual chart or written materials to show tasks that the child is expected to complete in an intervention session.
	Feedback	<p>The purpose of feedback is to provide the child with specific information on their performance (strengths and weaknesses) in relation to what is being taught. Feedback is intentional, specific to the intervention goal and provided immediately (or as soon as practicable) after the child’s performance. This may include:</p> <ul style="list-style-type: none"> - Verbal feedback: Child receives verbal information regarding their response or performance, e.g., “Oops, you forgot to say _____” or “Good work! You remembered to describe who the characters in the story are.” - Visual feedback: Child receives visual information regarding their response or performance, e.g., the barrier is lifted in a barrier game so the child can see differences in their response compared to a correct response, or a teacher holds up different colored cards in class as a way of giving feedback on a specific communication behavior. - Repetition as feedback: Child’s own response is repeated as a means of encouraging the child to correct their response, e.g., “Did you mean to say _____?” or “Does _____ sound right?” Repetition may be provided by an adult or may be a recording of the child’s response played back. - Natural consequence: Feedback received through natural consequence in an interaction, e.g., communication partner gives a confused look; child does/does not find an object by accurately following direction; or child receives/does not receive the item that they tried to ask for.
	Rewards/reinforcement	<p>Rewards (positive reinforcement) provided for the purpose of keeping the child motivated or interested. Rewards include non-tangible reinforcement, e.g., child receives opportunity to engage in a favored activity after task completion; or tangible reinforcement, e.g., child receives favored items after task completion.</p> <p>Notes: Natural consequences (above) are not also counted as rewards - if a child receives an item that they successfully requested then this is identified as a natural consequence rather than a reward. However, rewards may be provided in addition to a natural consequence, e.g., child may receive they item they requested and then also get a sticker to place on a chart. Verbal praise, encouragements and positive affirmations have not been included as “rewards” in this taxonomy. This is because positive interactions with clients is considered to have a place in all interventions (either with or without other rewards or feedback) and are thus not a feature that distinguishes some interventions from others.</p>

References

- American Speech-Language-Hearing Association. (2010). *Roles and responsibilities of speech-language pathologists in schools [Professional Issues Statement]*. <http://www.asha.org/policy/PI2010-00317/>
- American Speech and Hearing Association. (n.d.). *Language in Brief*. <http://www.asha.org/Practice-Portal/Clinical-Topics/Spoken-Language-Disorders/Language-In--Brief/>
- Beukelman, D. R., & Mirenda, P. (2013a). Instruction to Support Linguistic and Social Competence. In *Augmentative and Alternative Communication: Supporting Children and Adults with Complex Communication Needs* (pp. 279-308). Paul H. Brookes Publishing.
- Beukelman, D. R., & Mirenda, P. (2013b). Language Development and Intervention: Challenges, Supports and Instructional Approaches. In *Augmentative and Alternative Communication: Supporting Children and Adults with Complex Communication Needs* (pp. 255-278). Paul H. Brookes Publishing.
- Boyle, J., McCartney, E., Forbes, J., & O'Hare, A. (2007). A randomised controlled trial and economic evaluation of direct versus indirect and individual versus group modes of speech and language therapy for children with primary language impairment. *Health Technology Assessment*, *11*(25), iii-iv, xi.
- Cirrin, C. M., Schooling, T. L., Nelson, N. W., Deihl, S. F., Flynn, P. F., Staskowski, M., & Adamczyk, D. F. (2010). Evidence-Based systematic review: Effects of different service delivery models on communication outcomes for elementary school-aged children. *Language, Speech, and Hearing Services in Schools*, *41*, 233-264. [https://doi.org/10.1044/0161-1461\(2009/08-0128\)](https://doi.org/10.1044/0161-1461(2009/08-0128))
- Damico, J. S., & Damico, S. K. (1997). The establishment of a dominant interpretive framework in language intervention. *Language, Speech & Hearing Services in Schools*, *28*(3), 288-296. <https://doi.org/10.1044/0161-1461.2803.288>
- Dawson, P., & Guare, R. (2015). Overview of Executive Skills. In *Executive Skills in Children and Adolescents* (2nd ed.). Guilford Publications.
- Dickson, K., Marshall, M., Boyle, J., McCartney, E., O'Hare, A., & Forbes, J. (2009). Cost analysis of direct versus indirect and individual versus group modes of manual-based speech-and-language therapy for primary school-age children with primary language impairment. *International Journal of Language & Communication Disorders*, *44*(3), 369-381.
- Ebbels, S. (2007). Teaching grammar to school-aged children with specific language impairment using Shape Coding. *Child Language Teaching and Therapy*, *23*(1), 67-93.
- Eisenberg, S. (2014). What works in therapy: Further thoughts on improving clinical practice for children with language disorders. *Language, Speech, and Hearing Services in Schools*, *45*(2), 117-126. https://doi.org/10.1044/2014_LSHSS-14-0021
- Embry, D. D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review*, *11*, 75-113. <https://doi.org/10.1007/s10567-008-0036-x>
- Fey, M. E. (1986a). Developing Intervention Plans. In *Language Intervention with Young Children*. College-Hill Press.
- Fey, M. E. (1986b). Training Content-Form Interactions: Child-Oriented Approaches. In *Language Intervention with Young Children* (pp. 191-204). College-Hill Press.
- Fey, M. E. (1986c). Training Content-Form Interactions: Hybrid Intervention Approaches. In *Language Interventions with Young Children* (pp. 205-234). College-Hill Press.
- Fey, M. E. (1986d). Training Content-Form Interactions: Trainer-Oriented Approaches. In *Language Intervention with Young Children* (pp. 121-190). College-Press.
- Gillam, R. B., & Loeb, D. (2010). Principles for school-age language intervention: Insights from a randomized controlled trial. *ASHA Leader*, *15*(1), 10-13.
- Gillam, S. L., Gillam, R. B., & Reece, K. (2012). Language outcomes of contextualized and decontextualized language intervention: Results of an early efficacy study. *Language, Speech, and Hearing Services in Schools*, *43*(3), 276-291. [https://doi.org/10.1044/0161-1461\(2011/11-0022](https://doi.org/10.1044/0161-1461(2011/11-0022)
- Hegde, M. N. M., C. A. (2006). Evidence-Based Treatment Techniques. In *Language Disorders in Children* (pp. 173-208). Pearson
- Helland, T., Tomas, T., Hovden, M., Ofte, S., & Heimann, M. (2011). Effects of bottom-up and top-down intervention principles in emergent literacy in children at risk of developmental dyslexia: A longitudinal study. *Journal of Learning Disabilities*, *44*(2), 105-122. <https://doi.org/10.1177/0022219410391188>

- Henry, L. A., Messer, D. J., & Nash, G. (2012). Executive functioning in children with specific language impairment. *Journal of Child Psychology and Psychiatry*, 53(1), 37–45. <https://doi.org/10.1111/j.1469-7610.2011.02430.x>
- Hyter, Y. D. (2003). Language intervention for children with emotional or behavioral disorders. *Journal of the Council for Children with Behavioral Disorders*, 29(1), 65-76. <https://doi.org/10.1177/019874290302900104>
- Justice, L. M., & Redle, E. R. (2014). Communication Sciences and Disorders: A Clinical Evidence-Based Approach In L. M. Justice & E. R. Redle (Eds.), *Communication Assessment and Intervention: Evidence-Based Practice* (3 ed., pp. 187-189). Pearson.
- Kaderavek, J. N. (2015). Principles of Intervention. In *Language Disorders in Children* (pp. 135-170). Pearson.
- Kamhi, A. G. (2014). Improving clinical practices for children with language and learning disorders. *Language, Speech, and Hearing Services in Schools*, 45(92-103). https://doi.org/10.1044/2014_LSHSS-13-0063
- Knight, V., McKissick, B. R., & Saunders, A. (2013). A review of technology-based interventions to teach academic skills to students with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 43(11), 2628-2648. <https://doi.org/10.1007/s10803-013-1814-y>
- Koole, H., Nelson, N. W., & Curtis, A. B. (2015). Factors influencing choices of contextualized versus traditional practices with children and adolescents who have traumatic brain injury. *Language, Speech, and Hearing Services in Schools*, 46, 352-361. https://doi.org/10.1044/2015_LSHSS-14-0109
- Larson, V. L., & McKinley, N. L. (2003). Procedures for Direct Assessment. In *Communication solutions for older students* (pp. 209-268). Thinking Publications.
- Law, J., Campbell, C., Roulstone, S., Adams, C., & Boyle, J. (2008). Mapping practice onto theory: The speech and language practitioner's construction of receptive language impairment. *International Journal of Language and Communication Disorders*, 43, 245-263. <https://doi.org/10.1080/13682820701489717>
- Law, J., Garrett, Z., & Nye, C. (2003). Speech and language therapy interventions for children with primary speech and language delay or disorder. *Cochrane Database of Systematic Reviews*(3). <https://doi.org/10.1002/14651858.CD004110>
- Law, J., Lee, W., Roulstone, S., Wren, Y., Zeng, B., & Lindsay, G. (2012). "What works": Interventions for children and young people with speech, language and communication needs. Research Report DFE-RR274-BCRP10.
- McCauley, R. J., Fey, M. E., & Gillam, R. B. (2017). Introduction to Treatment of Language Disorders in children. In *Treatment of Language Disorders in Children* (2nd ed., pp. 1-21). Paul H. Brookes Publishing Co.
- McClintock, B., Pesco, D., & Martin-Chang, S. (2014). Thinking aloud: Effects on text comprehension by children with specific language impairment and their peers. *International Journal of Language & Communication Disorders*, 49(6), 637-648. <https://doi.org/10.1111/1460-6984.12081>
- Molini-Avejonas, D. R., Rondon-Melo, S., de La Higuera Amato, C. A., & Samelli, A. G. (2015). A systematic review of the use of telehealth in speech, language and hearing sciences. *Journal of telemedicine and telecare*, 21(7), 367-376. <https://doi.org/10.1177/1357633X15583215>
- Paesani, K. (2005). Literary texts and grammar instruction: Revisiting the inductive presentation. *Foreign language annals*, 38(1), 15-23. <https://doi.org/10.1111/j.1944-9720.2005.tb02449.x>
- Paul, D., & Roth, F. P. (2011). Guiding principles and clinical applications for speech-language pathology practice in early intervention. *Language, Speech, and Hearing Services in Schools*, 42, 320–330. [https://doi.org/10.1044/0161-1461\(2010/09-0079](https://doi.org/10.1044/0161-1461(2010/09-0079)
- Paul, R., & Norbury, C. F. (2012). Principles of Intervention. In R. Paul & C. F. Norbury (Eds.), *Language Disorders from Infancy through Adolescence: Listening, Speaking, Reading, Writing and Communicating* (4 ed., pp. 61-99). Mosby Elsevier.
- Pokorni, J. L., Worthington, C. K., & Jamison, P. L. (2004). Phonological awareness intervention: Comparison of Fast ForWord, Earobics, and LiPS. *The Journal of Educational Research*, 97(3), 147-157. <https://doi.org/10.3200/JOER.97.3.147-158>
- Proctor-Williams, K. (2009). Dosage and distribution in morphosyntax intervention: Current evidence and future needs. *Topics in Language Disorders*, 29(4), 294-311. <https://doi.org/10.1097/TLD.0b013e3181c29dc0>
- Proctor-Williams, K., & Fey, M. E. (2007). Recast density and acquisition of novel irregular past tense verbs. *Journal of Speech, Language, and Hearing Research*, 50, 1029-1047. [https://doi.org/10.1044/1092-4388\(2007/072\)](https://doi.org/10.1044/1092-4388(2007/072))
- Ramdoss, S., Lang, R., Mulloy, A., Franco, J., O'Reilly, M., Didden, R., & Lancioni, G. (2011). Use of computer-based interventions to teach communication skills to children with Autism Spectrum Disorders: A systematic review. *Journal of Behavioral Education*, 20(1), 55-76. <https://doi.org/10.1007/s10864-010-9112-7>

- Reichow, B., & Volkmar, F. R. (2010). Social skills interventions for individuals with autism: Evaluation for evidence-based practices within a best evidence synthesis framework. *Journal of Autism and Developmental Disorders*, 40(2), 149-166. <https://doi.org/10.1007/s10803-009-0842-0>
- Rosenshine, B. (2012). Principles of instruction: Research-based strategies that all teachers should know. *American Educator*, 36(1), 12.
- Roth, F. P., & Paul, R. (2014). Communication Intervention: Principals and Procedures. In R. Paul (Ed.), *Introduction to Clinical Methods in Communication Disorders* (pp. 175-202). Paul H. Brooks Publishing Co.
- Sanger, D., Snow, P. C., Colburn, C., Gergen, M., & Ruf, M. (2012). Speech-language pathologists' reactions to response to intervention: A qualitative study. *International Journal of Speech-Language Pathology*, 14(1), 1-10. <https://doi.org/10.3109/17549507.2011.604793>
- Singer, B. D., & Bashir, A. S. (1999). What are executive functions and self-regulation and what do they have to do with language-learning disorders? *Language, Speech, and Hearing Services in Schools*, 30(3), 265-273. <https://doi.org/10.1044/0161-1461.3003.265>
- 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. <https://doi.org/10.1111/1460-6984.12003>
- Smith-Lock, K. M., Leitao, S., Prior, P., & Nickels, L. (2015). The effectiveness of two grammar treatment procedures for children with SLI: A randomized clinical trial. *Language, Speech, and Hearing Services in Schools*, 46, 312-324. https://doi.org/10.1044/2015_LSHSS-14-0041
- Snell, M. E., Chen, L. Y., & Hoover, K. (2006). Teaching augmentative and alternative communication to students with severe disabilities: A review of intervention research 1997-2003. *Research and Practice for Persons with Severe Disabilities*, 31(3), 203-214.
- Speech Pathology Australia. (2014). *Submission to the inquiry into the prevalence of different types of speech, language and communication disorders and speech pathology services in Australia*. https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Community_Affairs/Speech_Pathology
- Starling, J., Munro, N., Togher, L., & Arciuli, J. (2012). Training secondary school teachers in instructional language modification techniques to support adolescents with language impairment: A randomized controlled trial. *Language, Speech and Hearing Services in Schools*, 43(4), 475-495. [https://doi.org/10.1044/0161-1461\(2012/11-0066\)](https://doi.org/10.1044/0161-1461(2012/11-0066))
- Ukrainetz, T. A. (2006). Assessment and Intervention within a Contextualized Skill Framework. In *Contextualized Language Intervention: Scaffolding Pre-K-12 Literacy Achievement*. Thinking Publications.
- Ukrainetz, T. A. (2015a). The Foundations of Language Intervention: Theory and Research. In T. A. Ukainetz (Ed.), *School-Age Language Intervention: Evidence-Based Practices*. PRO-ED.
- Ukrainetz, T. A. (2015b). Speech-Language Pathology in the Schools. In *School-Age Language Intervention: Evidence-Based Practices*. Pro-Ed.
- Warren, S. F., Fey, M. E., & Yoder, P. J. (2007). Differential treatment intensity research: A missing link to creating optimally effective communication interventions. *Mental Retardation and Developmental Disabilities Research Reviews*, 13, 70-77. <https://doi.org/10.1002/mrdd.20139>
- Westby, C. (2007). Application of the ICF in children with language impairments. *Seminars in Speech and Language*, 28(4), 265-272. <https://doi.org/10.1055/s-2007-986523>
- White, S. W., Keonig, K., & Scahill, L. (2007). Social skills development in children with autism spectrum disorders: A review of the intervention research. *Journal of Autism and Developmental Disorders*, 37(10), 1858-1868. <https://doi.org/10.1007/s10803-006-0320-x>
- Wolter, J. (2007). Assessment and Diagnosis of Adolescents and Young Adults: Spoken Language Disorders. In A. G. Kamhi, J. J. Masterson, & K. Apel (Eds.), *Clinical Decision-Making in Developmental Language Disorders* (pp. 55-76). Paul. H. Brooks Publishing Co.