

# **Auditory (Re)habilitation Teaching Behavior Rating Scale**

Jill Duncan

*RIDBC Renwick Centre for Research and Professional Education  
University of Newcastle, Australia*

Andrew Kendrick

*Cochlear Ltd., Macquarie University, Australia*

Mary D. McGinnis

*John Tracy Clinic, Los Angeles  
University of San Diego, Los Angeles*

Christina Perigoe

*The University of Southern Mississippi*

The Auditory (Re)habilitation Teaching Behavior Rating Scale (A[R]TBRS) is an instrument used to assist novice practitioners to develop the key teaching behaviors essential for pediatric auditory (re)habilitation and to document the use of these teaching behaviors over time. The A(R)TBRS was designed to evaluate graduate students during practice teaching and is comprised of 34 teaching behaviors. Each behavior and its associated scoring mechanism is described. The purpose of this paper is to introduce the A(R)TBRS to the professional and academic community.

Caregivers of children with a hearing loss make a decision early regarding the preferred method of communication these children will utilize. This may include

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Jill Duncan, RIDBC Renwick Centre for Research and Professional Education and University of Newcastle, Australia; Andrew Kendrick, Cochlear Ltd., Macquarie University, Australia; Mary D. McGinnis, John Tracy Clinic, Los Angeles, California and DHH Program, University of San Diego, Los Angeles; Christina Perigoe, Department of Speech and Hearing Sciences, The University of Southern Mississippi.

Correspondence concerning this article should be addressed to Jill Duncan, RIDBC Renwick Centre, University of Newcastle, Private Bag 29, Parramatta, NSW 2124, Australia. Telephone: +61 2 9872 0331. Fax: +61 2 9873 1614. E-mail: [jill.duncan@ridbc.org.au](mailto:jill.duncan@ridbc.org.au)

listening and spoken language, also known as auditory-based spoken communication. These children are also supported by the use of appropriate hearing technology, such as digital hearing aids, cochlear implants, or combined technologies. However, despite early diagnosis, early intervention, and the presence of residual hearing, there is no guarantee that a child will use spoken communication (Geers, Tobey, Moog, & Brenner, 2008; Remine, Brown, Care, & Rickards, 2007). Children may require a formal program that optimizes the development of their listening skills. This, in turn, facilitates the development of auditory-based spoken communication (Duncan, 2006). The responsibility for implementation of such programs lies with auditory (re)habilitation practitioners.

It is essential that novice auditory (re)habilitation practitioners develop teaching behaviors which facilitate auditory-based spoken communication in children with hearing loss. The Auditory (Re)habilitation Teaching Behavior Rating Scale (A[R]TBRS) was developed to support novice practitioners and their mentors or supervisors when applying theory to practice. The purpose of this paper is to introduce the A(R)TBRS to the professional and academic community.

### **BACKGROUND TO THE DEVELOPMENT OF A(R)TBRS**

The original A(R)TBRS (Duncan, 2005) was developed as an assessment tool for use with graduate students at the Royal Institute for Deaf and Blind Children Renwick Centre, University of Newcastle, Australia and by academics to support novice practitioners in China and India.

In developing the A(R)TBRS, an intensive literature search of recorded auditory-verbal, auditory oral, and auditory (re)habilitation teaching behaviors was conducted. Many of the teaching behaviors had been identified by Caleffe-Schenck (1983, 1992a, 1992b), and later refined by Perigoe (Auditory-Verbal International, 2004; Auditory-Verbal International Certification Council, 2004; Auditory-Verbal International Professional Education Committee, 1998/1999). Some of the teaching behaviors were described in texts as early as the 1900s (Goldstein, 1920, 1939; Urbantschitsch, 1895/1982). All teaching behaviors are the result of technological and pedagogical advances and most used in the A(R)TBRS can be identified in the work of Helen Beebe (Beebe, 1953, 1976, 1982; Beebe, Pearson, & Koch, 1984), Doreen Pollack (Pollack, 1964, 1970, 1981, 1984), and Daniel Ling (Ling, 1964, 1973, 1976, 1984, 1989, 2002).

In addition, the personal notes of Helen Beebe, Doreen Pollack, and Daniel Ling were examined for informal unpublished references to teaching behaviors and more than 8 hr of video recordings of Beebe, Pollack, and Ling were analyzed to identify and corroborate the teaching behaviors. Finally, 10 Certified LSLS Auditory-Verbal Therapists were asked to test the A(R)TBRS in order to refine usability of the instrument.

The literature review and examination of Beebe, Pollack, and Ling's personal notes identified predictable, observable teaching behaviors of the auditory-verbal

methodology, which, in addition to its principles (AG Bell Academy for Listening and Spoken Language, 2005b), shape practice. Importantly, the process verified that no single teaching behavior defines the methodology; rather it is a combination of a variety of strategies and techniques (Duncan, 2006). This reflects the approach by practitioners who use a wide range of (re)habilitative techniques to elicit targets, and to encourage carryover of skills from formal intervention contexts to informal social discourse settings.

### **Terminology**

The A(R)TBRS uses a scale to rate teaching behaviors. The term *auditory (re)habilitation* is used in this rating scale as opposed to *auditory-verbal* for four reasons. First, auditory-verbal is purported to be an early intervention methodology and excludes older school age children and adolescents (AG Bell Academy for Listening and Spoken Language, 2005a). By using the term auditory (re)habilitation, the question regarding the exclusion of school-age children and adolescents in the use of the A(R)TBRS is bypassed. Second, auditory (re)habilitation is the broad term recognized by the American Medical Association Current Procedural Technology (Fifer, 2006). Thus it embraces current terminology. Third, the term auditory (re)habilitation includes all auditory-based communication methodologies, not just auditory-verbal practice. And finally, auditory (re)habilitation is a more inclusive term, since it deals with children who are developing skills through habilitation, as well as children who are involved in remedial skills rehabilitation. The term *rehabilitation* refers to the restoration and remediation of skills after an illness or injury (Soanes & Stevenson, 2005), while *habilitation* is the facilitation of a skill yet to be developed. *(Re)habilitation* is used in the A(R)TBRS to refer to two groups of children, those who require remediation of skills and those who require development of skills.

Other terms found in this article deserve some explanation as well. The term *caregiver(s)* used in the A(R)TBRS denotes the person(s) primarily responsible for the needs of the child. The term *child* is interchangeable with *student* when auditory (re)habilitation includes school-age children. The term *practitioner* refers to the teacher of the deaf, auditory-verbal therapist, auditory-verbal educator, speech language pathologist, or audiologist involved in the auditory (re)habilitation. The terms *supervisor* and *mentor* refer to any person engaged in supporting the novice practitioner during the first 3 to 4 years of practice. Please note that in this manuscript, *student* is referred to as the school age child with hearing loss; whereas *graduate student* refers to individuals enrolled in tertiary studies post bachelors degree.

### **Scoring**

The A(R)TBRS is composed of 33 teaching behaviors scored on a scale from 0-3 points. A 34th teaching behavior is worth 1 point. The supervisor or men-

tor must view an entire auditory (re)habilitation session to be able to adequately score the novice practitioner via the A(R)TBRS. A score of 0 is given if the teaching behavior is never observed, 1 if the teaching behavior is observed sometimes, 2 if the behavior is observed often, and 3 if the behavior is always observed. The 34th behavior scores the novice practitioner's ability to maintain up-to-date records in four key areas: audiological information, documentation of short and long-term goals, session plans and progress notes, and developmental interdisciplinary team records. If the supervisor or mentor deems all key areas are up to date, a single point is awarded; otherwise a zero is awarded. The highest total possible score on the A(R)TBRS is 100.

The novice practitioner and the supervisor/mentor each complete a separate A(R)TBRS. The two then meet and discuss the use of specific teaching behaviors and the novice practitioner's overall progress.

### TEACHING BEHAVIORS AND DESCRIPTIONS

The 34 teaching behaviors contained in the A(R)TBRS refer directly to the work of Beebe, Pollack, and Ling. Formal citations of these pioneers' teaching behaviors as observed on video footage, however, have been omitted, and only general supporting references for each behavior have been cited.

The A(R)TBRS is divided into five main sections: cognitive linguistic, auditory, speech, caregiver/student guidance, and instructional presentation and planning.

#### *Cognitive/Linguistic*

**1. Plans and implements a range of integrated cognitive, linguistic, auditory, social, and speech objectives based on stages of typical development.** A child's development involves the complex interaction of perception, cognition, and communication (Medina, 2008). No one domain develops in isolation (Duncan, 2006). Where possible, all objectives in (re)habilitation are integrated. For example, the primary focus is not on speech for the sake of speech, but on speech as incorporated into spontaneous spoken language to improve communication. It is also important to assess how children use spoken language spontaneously, because it provides the best representation of true language skill and phonological performance.

**2. Converses with child slightly above his/her cognitivelinguistic level.** A child's thinking and creation of meaning is socially constructed, emerging out of social interactions in the environmental context. Learning can be expedited if interaction takes place with a more sophisticated interaction partner, who provides models of complex cognitive and linguistic skills within the limit that can be achieved by the child. This process is drawn from Vygotsky's (1962, 1978) "zone of proximal development" which is the difference between what a learner can do alone and what the learner can do with the assistance of a more sophisticated per-

**Table 1**  
Auditory (Re)habilitation Teaching Behavior Rating Scale

<b>COGNITIVE/LINGUISTIC</b>	<b>NEVER</b>	<b>SOMETIMES</b>	<b>MOSTLY</b>	<b>ALWAYS</b>
1. Plans and implements a range of integrated cognitive, linguistic, auditory, social, and speech objectives based on stages of typical development				
2. Converses with child/student slightly above his/her cognitive/linguistic level				
3. Communicates with child/student and caregivers in a manner that facilitates natural social discourse				
4. Uses expectant pauses/wait time to encourage turn taking and auditory/cognitive processing				
5. Facilitates transfer of target language to informal social discourse				
6. Employs strategies to stimulate creative and independent thinking				
<b>AUDITORY</b>	<b>NEVER</b>	<b>SOMETIMES</b>	<b>MOSTLY</b>	<b>ALWAYS</b>
7. Monitors hearing device function, uses device(s) properly, and transfers responsibility to caregiver/student				
8. Provides input through audition first and last				
9. Varies auditory stimuli length using word and/or sentence and/or discourse activities				
10. Maximizes audition in both formal and incidental context by minimizing visual or tactile cues				
11. Uses acoustic highlighting appropriately by proceeding from more to less				
12. Maximizes audition by positioning child/student/caregiver appropriately to encourage a listening attitude/posture				
13. Develops and uses auditory feedback system to facilitate speech and spoken language production				

*Continued on next page*

**Table 1** continued from previous page

<b>SPEECH</b>	<b>NEVER</b>	<b>SOMETIMES</b>	<b>MOSTLY</b>	<b>ALWAYS</b>
14. Models and facilitates speech and spoken language with natural rate, rhythm, and prosody				
15. Accepts or facilitates child/student's intelligible speech production, including effectively implementing appropriate strategies for development/remediation				
16. Facilitates transfer of appropriate speech production into natural social discourse				
<b>CAREGIVER/STUDENT GUIDANCE</b>	<b>NEVER</b>	<b>SOMETIMES</b>	<b>MOSTLY</b>	<b>ALWAYS</b>
17. Provides opportunities for caregiver/student to reflect and share relevant experiences				
18. Describes objectives to caregiver/student before beginning of each activity				
19. Models (demonstrates) and explains strategies and techniques clearly to caregiver/student				
20. Discusses with caregiver/student the outcome of each activity throughout the session or at the conclusion				
21. Identifies with the caregiver/student goals for future planning and carryover				
22. Maintains rapport with caregiver/student through active and constructive listening techniques				
23. Maintains active involvement/participation/practice of caregiver/student through coaching in a constructive and supportive manner while creating an environment which is enjoyable and motivating				

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Table 1 continued from previous page

INSTRUCTIONAL PRESENTATION AND PLANNING	NEVER	SOMETIMES	MOSTLY	ALWAYS																								
24. Seizes "learnable" moments through informal and incidental opportunities																												
25. Evaluates and reviews previous targets and sets new targets as required, incorporating caregiver/student feedback and suggestions																												
26. Uses diagnostic teaching techniques by incorporating ongoing informal appraisal of student performance and shares results with caregiver/students																												
27. Uses scaffolded teaching strategies such as modeling, recasting, explaining, questioning																												
28. Provides encouraging and appropriate feedback to caregiver/student																												
29. Maintains appropriate pacing that enables the caregiver/child/student to learn																												
30. Provides balance between child-led and adult-led activities, appropriate for the child's age and stage of development																												
31. Selects and implements a variety of instructional materials, activities, and/or strategies to accommodate needs, capabilities, and learning styles of caregivers/students																												
32. Integrates appropriate pre-literacy/literacy activities linked to objectives																												
33. Employs positive behavior management techniques and transfers skills to caregiver/students																												
34. Maintains adequate documentation record keeping that ensures appropriate monitoring of the child's/student's development																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%; text-align: center;">Never</td> <td style="width: 15%; text-align: center;">Sometimes</td> <td style="width: 15%; text-align: center;">Mostly</td> <td style="width: 15%; text-align: center;">Always</td> <td style="width: 15%; text-align: center;">#34</td> </tr> <tr> <td style="text-align: right;">Total number of items</td> <td style="text-align: center;">..... × 0</td> <td style="text-align: center;">..... × 1</td> <td style="text-align: center;">..... × 2</td> <td style="text-align: center;">..... × 3</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">.....+</td> <td style="text-align: center;">.....+</td> <td style="text-align: center;">.....+</td> <td style="text-align: center;">.....+</td> <td style="text-align: center;">+1</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">=.....%</td> </tr> </table>						Never	Sometimes	Mostly	Always	#34	Total number of items	..... × 0	..... × 1	..... × 2	..... × 3			.....+	.....+	.....+	.....+	+1						=.....%
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son. It refers to the knowledge and skill a practitioner uses to identify when a child is struggling to attain a skill; and it is followed by the practitioner's immediate implementation of scaffolding strategies designed to help the learner achieve a higher level of functioning (Kaufman, 2004; Vygotsky, 1962, 1978).

**3. *Communicates with child and caregivers in a manner that facilitates natural social discourse.*** The practitioner monitors the child's contribution to social discourse and is careful to wait for the child to process the information and respond. During this interaction, it is important to display a high level of affective support and nurturing of the child and family to build rapport. This requires the adult to draw information from the child, using a range of strategies including: following the child's lead; questioning; commenting; expanding and directing, while narrating the reasoning and meaning underlying the child's actions (Bronfenbrenner, 1973/2005, 1979, 1988/2005; Bronfenbrenner & Morris, 1998, 2006; Vygotsky 1962, 1978).

**4. *Uses expectant pauses/wait-time to encourage turn taking and auditory/cognitive processing.*** There are many positive effects attributed to the wait-time concept, which was originally identified by Rowe (1974a, 1974b, 1974c), however, wait-time in auditory (re)habilitation serves three primary purposes. First, it allows the child time to process the auditory signal. Second, it provokes a verbal response from the child and facilitates the development of turn-taking. Third, it slows the conversation, allowing it to be more natural and less structured. As the child's skill increases, the practitioner decreases the scaffolding, which, in this case, is the length of the pause.

**5. *Facilitates transfer of target language to informal social discourse.*** New language and vocabulary are more meaningful when introduced in an age-appropriate and meaningful context. Initially, this context may need to be highly structured, but the practitioner progresses toward less structured, more informal interactions. Scaffolded learning techniques facilitate movement from formal to informal contexts (Rockwell, 2008). These include questioning, prompting, repetition, or rephrasing.

**6. *Employs strategies to stimulate creative and independent thinking.*** Creative and independent thinking are stimulated by helping a child make connections, think of alternatives, and imagine possibilities. Tasks that develop creative and independent thinking include: answering open-ended questions; justifying correct responses; applying learning to solve a new problem; categorizing objects, words, or events in multiple ways; creating hypotheses; organizing facts; and synthesizing data to reach more abstract generalizations (Anderson & Krathwohl, 2001; Bloom, 1956).

### ***Auditory***

**7. *Monitors hearing device function, uses device(s) properly, and transfers responsibility to caregiver/child.*** Appropriate fitting and programming of all



hearing technology is essential in order to access spoken language through audition. The practitioner supports the caregiver in becoming a competent manager of hearing technology by providing opportunities to understand and practice basic maintenance of equipment. This includes the routine practice of using a stetho-clip to listen to the hearing aid signal or monitor earphones to listen to the signal of the cochlear implant, and administering the Ling Six Sound Test (Ling, 1978, 2002; Ling & Ling, 1978) at 1 and 3 m (Agung, Purdy, & Kitamura, 2005) at the start of every auditory (re)habilitation session. It is important that caregivers listen to the child's hearing device every morning and check young children's devices frequently during the day. When a child is sufficiently mature, care of listening technology can become the child's responsibility, however the practitioner continues to check the device prior to formal instruction.

**8. Provides input through audition first and last.** In general, spoken language is a reflection of what is heard (Ling, 2002). If, after auditory presentation of a stimulus, the child is unable to respond appropriately through the auditory feedback mechanism, the addition of visual or tactile cues may serve as a bridge. After the presentation of a non-auditory cue, the skilled practitioner immediately re-presents the target through audition, so that the child's first and last stimulation mode is auditory. Even though eye contact is an essential component of communication, the practitioner maximizes the use of audition as the primary sense modality in developing spoken language communication. The acoustic properties of spoken language, including all segmental and suprasegmental information, are more salient when presented through audition, rather than vision (Ling, 2002).

**9. Varies auditory stimulus length using a combination of auditory word and/or sentence and/or conversational activities.** Children require the opportunity to practice listening to all lengths of spoken language, whether it is a word, sentence, or complete conversation. The practitioner promotes the development of auditory memory by requiring the child to remember progressively longer utterances. The practitioner follows a sequence of presentation of auditory stimuli that makes use of the child's developing auditory memory, from global messages, where the child's identification is based on intonation, rhythm, and length, to words where identification is based on pattern differences and then spectral properties, to phrases, sentences, and longer conversational exchanges (Stein, Benner, Hoversten, McGinnis, & Thies, 1979).

**10. Maximizes audition in formal and incidental context, minimizing visual or tactile cues.** The practitioner exploits all opportunities to develop and reinforce the child's auditory skills by connecting listening and language to communicative experiences. It is important to support natural listening and communication opportunities whereby the transfer of listening, speech, and language goals are maximized within both structured and unstructured tasks. The practitioner uses the unplanned, incidental events that occur during the session and

links them to the planned goals, so that they are embedded within purposeful language use (Otto, 2006). By minimizing visual and tactile cues, the practitioner assists the child in focusing on the auditory input of the speech signal. Therefore every opportunity is exploited to facilitate the use of the auditory modality for learning.

**11. Uses acoustic highlighting appropriately, proceeding from more to less.** Originally Daniel (1987) defined acoustic highlighting as the process of enhancing the audibility of specific elements of spoken language to aid the listener by making those components of the message more salient. As the listener becomes confident and competent in processing information through audition, the skilled practitioner fades or decreases the amount of acoustic highlighting and may decrease audibility by increasing the distance between speaker and listener, increasing the level of background noise, increasing the rate of delivery, and/or adding complexity of information. Highlighting techniques include whispering, singing, lengthening vowels within words, and emphasizing specific suprasegmentals and/or segmental features.

**12. Maximizes audition by positioning child and caregiver appropriately to encourage a listening attitude/posture.** Positioning of communication partners can naturally maximize auditory input (Ling, 1989, 2002). Care should be taken to sit on the side of the child's best hearing potential, whether it is through a cochlear implant or hearing aid. Attention can be focused on auditory input rather than non-auditory cues such as lipreading. Sitting to the side of the child naturally accomplishes this and has the added benefit of helping to establish joint attention on a toy, book, or other object. An optimal acoustic environment can be created by minimizing background noise and maximizing auditory input to encourage the child's positive auditory attitude.

**13. Develops and uses auditory feedback system to facilitate speech and spoken language production.** Auditory feedback is an important element in the development of spoken language (Paul, 2001). The quality of speech production is generally a reflection of how individuals perceive their own speech and that of the speaker. The "auditory feedback loop" or "speech chain" (Denes & Pinson, 1993) involves the child correcting the production of his spoken language based on a self-perceived error or based on feedback from the communication partner indicating an error.

### **Speech**

**14. Models and facilitates speech and spoken language with natural rate, rhythm, and prosody.** In order to develop fluent spoken language, the child must hear language that is syntactically, semantically, pragmatically, and phonologically correct. Using a natural voice when speaking provides a model for the child and for the caregiver, so that they, in turn, may use spoken language with natural rate, rhythm, and prosody. Prosodic patterns are carried primarily in the lower

frequency range. The majority of children with hearing loss who use hearing aids or cochlear implants can access this information. Prosodic cues also provide critical information about the speaker's gender and emotional state (Ross & Levitt, 2000) and are essential input for early speech development (Perigoe, 1999, 2001). Incorporating prosodic features in conversation is particularly important with very young children, as there is clear evidence for "prosodic continuity between one-word [utterances] and later speech" (Greenfield & Smith, 1976, p. 215). Practitioners sometimes mistakenly believe that over-articulating will assist the child in perception and consequently production. In fact, procedures that disrupt the natural rate and rhythm of speech, such as those that rely on visual cue systems, can be detrimental (Ling, 2002).

**15. *Accepts or facilitates child's intelligible speech production, including effectively implementing appropriate strategies for development/remediation.*** With early intervention and optimal auditory input, children can develop speech following typical developmental sequences of speech skill acquisition (Perigoe, 1999, 2001). This acquisition of speech patterns can be facilitated through rigorous use of audition as the primary sense modality for the development of both suprasegmentals and segmental speech patterns. For children who require more intervention and support, the use of an appropriate tactile or visual strategy can be effective, but the target should be "put back into hearing" so that the child can learn to self-monitor speech production through audition (Ling, Perigoe, & Gruenewald, 1981). The process of facilitating speech development involves extensive knowledge of the principles of both speech perception (acoustics) and speech production, including how speech sounds develop and how they build on previously learned speech patterns. Important practitioner skills include the ability to assess which features of speech the child is able to access through hearing, which speech sounds and processes are developmentally appropriate, and which prerequisite skills the child has mastered. It is critical that the practitioner be skilled at using appropriate strategies for both informal and formal speech development (Ling, 1976, 1989, 2002).

**16. *Facilitates transfer of appropriate speech production into natural social discourse.*** Transfer of the child's phonetic level speech skills to phonology, also known as *carryover*, focuses on the child's ability to generalize speech sounds from non-meaningful contexts, such as syllables, to meaningful contexts, such as words, phrases, sentences, and connected discourse (Perigoe, 1992, 1994; Perigoe & Ling, 1986). For very young children, who have received early intervention and who are well supported by their hearing technology, informal strategies for incorporation of speech in spoken language will generally facilitate use of developmentally appropriate speech targets in spoken communication. For older children, or those who are not supported as well by their hearing technology, a more structured approach to carryover may be required. In such cases, the practitioner plans for carryover, so that speech targets acquired at the phonetic (sylla-

ble) level are incorporated into the phonologic (spoken language) level (Ling, 1989, 2002).

### ***Caregiver/Student Guidance***

***17. Provides opportunities for caregiver/child to reflect and share relevant experiences.*** The process of reflection is a continuous cycle. Rapport building begins immediately upon the practitioner and family's initial introduction. In building that working partnership, it is important that shared expectations are established and maintained. During the process of intervention the caregiver and, where appropriate, child, is asked to reflect on personal experiences, so that the goals of the relationship are jointly developed. Life experiences become the catalyst for creating learning opportunities. Relating learning to life experiences is crucial in working with a caregiver in intervention, since carryover can only be accomplished when the caregiver can relate to the task. As intervention progresses, building on prior experiences serves as the unifying force that provides an anchor to which future learning experiences can be attached and strengthened as the caregiver and child are coached. The practitioner seeks to discover the learners' interests to find out why they are seeking learning, what they want to learn, and how best that learning can be related to their life experiences for greatest impact (Harlin, 2000).

***18. Describes objectives to caregiver/child before beginning of each activity.*** Adult learning theory principles emphasize that adults require goals that are clearly defined, practical, and relevant to their needs. They need to know how and why the learning will be useful to them. Effective learning requires learners to reflect on their learning, both retrospectively and prospectively (Conway, 2001). Prospective reflection helps learners plan for future success by relating and connecting their current experiences to their previous life experiences. The skilled practitioner addresses all of these needs when the objectives for each learning activity are connected to the broader goals that have been mutually agreed upon by both caregiver and practitioner. Then, before the activity begins, the practitioner can identify how the objective of the activity will help toward the development of broader goals.

***19. Models (demonstrates) and explains strategies and techniques clearly to caregiver/child.*** Modeling or demonstrating specific strategies and techniques can be a highly effective learning tool (Kermani & Brenner, 2000). Practitioners engage in a collaborative teaching relationship with caregivers as they develop skills that will facilitate the cognitive and linguistic development of their child. The goal is to gradually transfer knowledge and skill from the practitioner to the caregiver and child/student and encourage them to take charge of the learning process. Ideally, each unfamiliar strategy or technique employed by the practitioner will be explained in terms of what it is and why it is being used, prior to modeling.

**20. Discusses with caregiver/child the outcome of each activity throughout the session or at the conclusion.** Retrospective reflection is a technique for self-evaluation, carried out during or following an activity (Conway, 2001). The practitioner helps the caregiver or student to observe, act, and reflect on their own learning by assisting them in framing an issue or problem and creating a plan to address the problem. This should be an ongoing conversation between the practitioner and the caregiver/student. During each session, it is essential that the caregiver be given an opportunity to observe, practice, and be coached with the introduction and development of identified goals in all key areas including, but not limited to, audition, speech, language, and cognition. The practitioner allows sufficient time to discuss with the caregiver *what* goal is being introduced, *why* this particular goal is being developed, and *how* each goal can be further developed in everyday activities. The role of the practitioner is not to develop identified goals to the level of mastery, but to support the caregiver in developing the skills needed to develop agreed upon goals at home (AG Bell Academy for Listening and Spoken Language, 2005a, 2005b).

**21. Identifies with the caregiver/child goals for future planning and carry-over.** Adults learn best when activities are goal-oriented, relevant, and practical to them (Hanft, Rush, & Shelden, 2004). Through conversations in the coaching relationship, the practitioner and caregiver team identify goals and the best methods to achieve them. Once an objective toward the broader goal has been achieved, the caregiver and practitioner engage in the process of reflection and evaluation to determine how the objective can be carried over at home. The partners then mutually agree on other goals and objectives for the future.

**22. Maintains rapport with caregiver/child through active and constructive listening techniques.** When caregivers and practitioners respond appropriately to the child's behavioral cues in a timely manner, the child's learning is enhanced (Dunst et al., 2001). Engagement and rapport are gained through active, constructive listening, also known as "reflective listening," which can be a powerful tool. The continuous goal is for the listener to understand what the speaker is saying. This includes not only the content but also the emotions contained in the message. The listener then verifies with the speaker if the interpretation gleaned from the message is the correct one. It is essential for the practitioner to create a safe and comfortable learning environment for the caregiver and child/student, in which feelings are as valid a topic as are knowledge and skills (Hanft et al., 2004).

**23. Maintains active participation of caregiver/child through coaching in a constructive and supportive manner, while creating an environment that is enjoyable and motivating.** Caregiver coaching has been shown to be a strong force in developing children's skills (Blok, Fukkink, Gebhardt, & Leseman, 2005; Rush, Shelden, & Hanft, 2003). The truly collaborative relationship is a dynamic, reciprocal process through which the practitioner and family mutually

agree on and work toward successful outcomes. The goals of coaching are best met when practiced in a respectful, nonjudgmental fashion, where the practitioner supports the family in recognizing and capitalizing on their strengths and the strengths of their child, rather than their weaknesses. The reciprocal process of coaching involves cycling through stages of initiation, observation or action, reflection or evaluation, and continuation or resolution (Rush et al., 2003). For a child, creating an environment that is enjoyable and motivating goes hand in hand with learning. Activities that are interesting, engaging, and that produce competence and mastery are associated with optimal child learning (Dunst et al., 2001). Motivation for parents/caregivers includes the same aspects in presenting learning activities, but includes specifying the goal of the activity, as well as discovering how to relate it to the adult learner's previous experiences.

### ***Instructional Presentation and Planning***

***24. Seizes learnable moments through informal and incidental opportunities.*** The *learnable moment*, sometimes called the *teachable moment*, is that point of opportunity when the child/student is receptive to learning something new or adding to his/her current store of knowledge or skills. Vygotsky (1978) incorporated this into his zone of proximal development, in which learning is scaffolded by more experienced participants. Learnable moments occur when a child initiates an interaction and this communication is used to scaffold higher-level cognitive and linguistic functioning. Effective instruction is geared to the activities of the child, particularly those that the child initiates. Dewey (1897) viewed education as a social process tied intimately with the child's home life, where social interactions serve as the basis for language learning and opportunities for learning are woven into daily experiences. A continuum exists, which gradually sees a transition from informal to formal teaching, as new information becomes integrated into a child's existing knowledge base. The practitioner and caregiver continually search for teachable moments in daily interactions (Bronfenbrenner, 1973/2005, 1979, 1988/2005; Bronfenbrenner & Morris, 1998, 2006; Vygotsky, 1962, 1978).

***25. Evaluates and reviews previous targets and sets new targets as required, incorporating caregiver/child feedback and suggestions.*** Within each lesson there should be opportunities to assess learning victories. As targets are achieved, new ones are selected, and these are based on two developmental criteria: how easily related skills are achieved, and feedback from the caregiver and/or child. By linking targets to real-life situations, the child and caregiver find the learning process rewarding and participate in setting new objectives. Since goals that are too easy to achieve are not sufficiently motivating, they need to be specific, measurable, relevant, and sufficiently challenging or complex (Locke, 1968; Locke & Latham, 1990; Mind Tools, 2008). The practitioner structures goals into achievable subsets of skills. In this way, complex or more advanced

skills can be achieved with less frustration and greater enjoyment (Hodsen & Paden, 1983; Ling, 2002).

**26. Uses diagnostic teaching techniques by incorporating ongoing informal appraisal of student performance and shares results with caregiver/child.** *Diagnostic teaching* is a process of individualized interactions whereby the child's present level of functioning is assessed and appropriate goals are determined (Caleffe-Schenck, 1983; Hedgecock, 1963). This practice of adapting strategies and materials to meet the child's constantly changing needs is part of the process of ongoing evaluation. First the practitioner diagnoses the child's functioning and then scaffolds the child to a higher level of performance (see teaching behavior 28).

**27. Uses scaffolded teaching strategies such as modeling, recasting, explaining, questioning.** Cazden (1983) describes a scaffold as "a temporary framework for construction in progress" (p. 6). Bruner used the term to describe caregivers' assistance to children's language development (Wood, Bruner, & Ross, 1976). In scaffolding, the practitioner and caregiver develop targets that are just beyond the reach of the child. It is a fluid construct, used with greater or lesser frequency as the caregiver or child requires more or less assistance. The practitioner must constantly gauge how much or how little assistance is needed to help the caregiver and child achieve competence. Techniques employed include modeling, rephrasing/recasting, commenting, explaining, and questioning.

**28. Provides encouraging and appropriate feedback to caregiver/child.** Appropriate feedback is essential, so that the child and caregiver can progress toward attaining goals. Negative feedback can create defensive reactions that shut down the learner's willingness to hear more. The degree to which feedback is favorably received is determined by how it is delivered. Feedback should be constructive; that is, it should identify the strengths in the learner's knowledge, skills, and attitudes, and build on those strengths (Hanft et al., 2004).

**29. Maintains appropriate pacing that enables the caregiver/child to learn.** Pacing relates to the speed at which learning takes place and, within that context, helps to establish the conditions that enhance learning. Learning takes place in a low-anxiety environment. Conversely, pacing that is too fast runs the risk of creating anxiety, and learning decreases (Krashen & Terrell, 1983). Pacing that is too slow, however, may create an environment where a child quickly becomes bored and disruptive behavior ensues. The practitioner must continuously diagnose the caregiver's and child's responses to check for comprehension and adjust the pacing, if needed. Time must be taken to greet the caregiver and child, to discuss their home life, how much progress is being made, what barriers might have arisen to delay progress, and to reflect on learning. Time must be given to the child to process learning, to repeat and thereby cement a newly-learned behavior, and to pause and celebrate each newly learned skill.

**30. Provides balance between child-led and adult-led activities, appropriate**

*for the child's age and stage of development.* In developing session plans, practitioners must resist the inclination to focus on adult-directed activities as the primary method for achieving goals. It is essential for the practitioner to “follow the child's lead” or interests. Muma (1978) provides a review of 10 techniques for developing spoken language. The first five are child-initiated and he points out that extending the child's topic, or following the child's lead, is more effective in developing spoken language than syntactic correction or expansion. With very young children with hearing loss, language development appears to be facilitated by increased involvement of the child and by using child-centered interactions (Janjua, Woll, & Kyle, 2002). Positive language outcomes have been documented for children in auditory (re)habilitation programs that are “family-focused, child-driven” and “objective-oriented” (Rhoades & Chisolm, 2001). Activities and materials selected should be appropriate, not only for the child's age and level of cognitive development, but for the child's linguistic level and level of listening ability.

**31. *Selects and implements a variety of instructional materials, activities, and/or strategies to accommodate needs, capabilities, and learning styles of caregiver/child.*** A variety of developmentally appropriate instructional materials and activities within each session enhances learning. This practice allows for a variety of learning objectives within a single session, encourages the child to generalize over a large set of examples, heightens attention and motivation. Equally important is the practitioner's selection and implementation of strategies to promote the development of listening, spoken language, social skills, and cognition. Flexibility in using a variety of strategies and approaches in order to select those to which the child/caregiver is most responsive is essential to maximize learning (Dunn & Dunn, 1978; Gardner, 1999; Levine, 2001).

**32. *Integrates appropriate pre-literacy/literacy activities linked to objectives.*** The skilled practitioner incorporates pre-literacy and literacy activities into auditory practice and guides caregivers in the benefits and use of children's literature (Robertson, 2009). In addition, it is important to foster literacy skills that predict success with early reading, such as phonological and phonemic awareness (National Institute of Child Health and Human Development, 2000). Language and literacy development are bi-directional processes, since language development allows for the development of early literacy, while later literacy skills allow for more advanced linguistic development. A child who has a more complete, fluent command of spoken language will attain more advanced levels of reading comprehension. In addition, vocabulary presented through text is more novel and varied than spoken vocabulary, providing opportunities for enriched semantic development (Watson, 2001). Two important areas to address are world knowledge and vocabulary because both aid comprehension (Marschark & Lukomski, 2001).

**33. *Employs positive behavior management techniques and transfers discipline to caregiver/child.*** The development of listening skills is highly dependent



on the child's ability to attend to the auditory stimulus. Positive behavior management approaches not only reinforce wanted behaviors (such as paying attention) and ignore inappropriate behaviors, but they also highlight logical consequences of choices made and encourage the child to take responsibility for his/her actions (Fay & Funk, 1995). The practitioner helps caregivers develop behavior management techniques that consider both extrinsic and intrinsic factors. Extrinsic factors include: the environment, the objects and kinds of activities employed, people involved in the interaction, and antecedents to the behavior (Essa, 2008). Intrinsic factors include the child's health and state of mind. Caregivers and practitioners should be aware of the child's motivation for the behavior (Dreikurs, 1972). Social reinforcement is preferable to external reinforcement, which is distinguished from bribes (Essa, 2008). The skilled practitioner evaluates the use of reinforcement as a behavior management technique to determine whether it is effective and when other methods of encouragement and student participation might be more productive (Fay & Funk, 1995; Kohn, 1999, 2006).

**34. Maintain adequate documentation record keeping that ensures appropriate monitoring of the child's development.** Systematic documentation of information relating to the child and family supports the practitioner in planning goals that are realistic and achievable. Four key areas must be up-to-date: (a) audiological information, (b) documentation of short-term goals and long-term goals, (c) session plans and progress notes, and (d) developmental interdisciplinary team records.

## CONCLUSION

Although auditory (re)habilitation involves predictable teaching behaviors, it should not be seen as a simple prescription of exercises provided to the child in order to learn a particular skill. Rather, it is a more holistic, developmental approach to intervention, whereby the development of cognitive and linguistic functioning is achieved through social interaction. Emphasis is placed on the development of listening and language through natural social discourse including play, rhymes, songs, and daily routines, as well as structured activities within and outside of a formal learning context. Teaching behaviors presented here are not used in isolation, but concurrently. For example, the practitioner may follow the child's interests in an effort to seize teachable moments, while continuously providing appropriate feedback and using diagnostic teaching techniques, all while maximizing audition.

The Auditory (Re)habilitation Teaching Behaviors Rating Scale incorporates teaching behaviors originally identified by Beebe, Pollack, and Ling. It resembles the work originally developed by Caleffe-Schenck (1983, 1992a, 1992b) and later refined by Perigoe (Auditory-Verbal International, 2004; Auditory-Verbal International Certification Council, 2004; Auditory-Verbal International Profes-

sional Education Committee, 1998/1999). It can be used with young children and their caregivers, or with school age children. Its advantages include assisting novice practitioners to focus on key teaching behaviors, providing the supervisor a form for measuring the practitioner's use of teaching behaviors, and serving as a mechanism for documenting the novice practitioner's improvement over time.

### ***Endnote***

Reliability and validity studies are currently underway to improve the A(R)TBRS. In the meantime, the authors welcome feedback of any kind regarding its applicability to practice.

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