COLORADO INDIVIDUAL PERFORMANCE PROFILE: PRESCHOOL PRE-CIPP

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The Preschool version of the Colorado Individual Performance Profile was designed to provide professionals working with preschool aged children with educationally significant hearing losses an evaluation/assessment tool that was multipurpose. The Pre-CIPP, in its present form, is an evolving model, adapting and changing according to the input of parents, professionals, and children.

Currently, the PRE-CIPP can be used for the following purposes:

1. for placement into a variety of different types of preschool settings
2. for evaluation of a child’s progress within that service delivery option
3. for a record of individual child change over time
4. for evaluation of the effectiveness of specific intervention strategies
5. for establishing intervention goals for individual children
6. for evaluating effectiveness of programs, i.e., school district
7. for incorporating parent and professional input into the assessment procedure
8. for incorporating skills from a variety of settings: home and preschool
9. for incorporating parent report, interactional analysis, and standardized teacher administered assessments

The Pre-CIPP is recommended to be used at different times in a child’s educational program: (1) as an initial baseline assessment, (2) to document progress, (3) when advancing to the next grade level, (4) when transferring from one program to another, (5) when considering a change in services. The information is also used in the state’s database.

MEASUREMENT BY CONVERSION TO DEVELOPMENTAL QUOTIENTS

The Pre-CIPP departs from traditional recording of test scores by converting all scores from developmental ages to quotients representing the developmental age divided by the chronological age of the child (DQ = DA/CA Developmental Quotient = Developmental Age/Chronological Age). Standardized instruments provide a variety of reporting styles including developmental age scores, percentile ranks, and scaled scores. Interpretation of these results is often difficult for both parents and providers. Depending upon the nature of the hearing loss, presence of concomitant problems, age of identification, and success of the intervention technique, a child with a significant hearing loss could begin at percentile ranks below the tenth percentile.
when compared with normally developing children. This percentile rank can drop unless the child’s acquisition of skills is commensurate with chronological aged peers. The developmental quotient format is just another method of making reporting format uniform, regardless of the instrument used and providing a means to graphically display overall functioning, regardless of the instrument chosen for each developmental area.

**PLACEMENT INTO DIFFERENT PRESCHOOL/KINDERGARTEN SERVICE DELIVERY OPTIONS**

Although educational services may vary from school district to school district, placement of preschool children usually falls into one of the two following categories.

**SPECIALIZED PRESCHOOL SERVICES FOR DEAF AND HEARING-IMPAIRED CHILDREN**

This type of preschool program is staffed by a trained preschool teacher of deaf and hard of hearing children. Educational programming is commonly approached from one of the following teaching philosophies/language systems: American Sign Language, Auditory-Verbal, Auditory-Oral, or Total/Simultaneous Communication. Preschool services typically run for half or more of the school day. Individual therapy (e.g., speech, language, physical, etc.) may be provided as part of the school day or in addition to the school time. Most of the hearing peers should have normal English language development. The configuration of children within the classroom takes on different characteristics. Some examples are:

1. deaf/hearing-impaired and hearing peers integrated daily for the entire preschool time
2. deaf/hearing-impaired and hearing peers integrated daily for part of the preschool time
3. deaf/hearing-impaired and hearing peers integrated for part of the week (i.e., some days integrated and some days not integrated).
4. preschool services for only deaf and hearing-impaired children. Deaf and hearing-impaired children are integrated with hearing peers outside the preschool day.

**PRESCHOOL SERVICES NOT SPECIALIZED FOR DEAF AND HEARING-IMPAIRED CHILDREN**

This type of preschool program is staffed by a preschool teacher not necessarily familiar with children having educationally significant hearing losses. If the child uses sign language, a sign language “interpreter” may be present. Preschool services may run for half of the day or more. Individual therapy (e.g., speech-language, auditory-verbal, physical, etc.) may be provided as part of the school day or is provided in addition to the preschool time. Most of the hearing peers have normal English language development. If the hearing-impaired child is multihandicapped, the child may be grouped with other children with similar needs and disabilities. (Most of the children in the preschool have normal hearing. The deaf or hard of hearing child is integrated into the preschool with or without special services.)

**TRANSITION FROM PARENT/INFANT TO PRESCHOOL TO KINDERGARTEN**

The Pre-CIPP has been used to make placement decisions more objective. Infant/Toddler developmental profiles (Stredler-Brown & Yoshinaga-Itano, 1994) can be used as a baseline measure to determine whether preschool placement facilitates, stabilizes, or decreases development of skills.

**DEVELOPMENTAL PROFILE OF A CHILD’S PROGRESS OVER TIME**

The Pre-CIPP allows comparison of different assessment tools in a standard format,
because all scores are transformed to developmental quotients. The Pre-CIPP can help determine whether the child is demonstrating developmental growth commensurate with normally hearing peers, 1 month of development for 1 month of chronological age or whether or not the child standardly makes 3 months of gain for every 6 months of life. Whether the developmental gains are increasing within the same chronological age range or whether they are remaining the same or decreasing can be determined using this protocol.

**Efficacy of Intervention Strategies**

Many variables can influence the effectiveness and appropriateness of an intervention program for children with educationally significant hearing loss. Different stages of development may require different strategies. Attainment of certain skills may allow a child to become successful in different settings or may warrant decreased dependency upon special services. Increased difficulty of content may require higher level functioning and may necessitate an increase in special services in order for the child to maintain optimal progress. In cases where the success of specific intervention strategies may be questioned, the Pre-CIPP could be used to determine effectiveness of the technique.

**Effectiveness of Program**

The Pre-CIPP can help programs determine whether they are effective for a variety of different needs and children or whether they are more effective for some types of children, some ages of children, or some modes of communication. If Pre-CIPP protocols are done for every preschool child, programmatic patterns may emerge. For example, children within school districts or programs may be compared by developmental profiles. These characteristics may be by modality. In the larger school districts, there may be a variety of placements.

Comparisons of children in specialized preschools for children with hearing loss versus preschools with predominantly hearing children may be compared on the basis of their social-emotional functioning, language skills, learning potential, or speech intelligibility. Certain programs may demonstrate higher overall functioning in specific types of programs.

**Individualized Goals**

The Pre-CIPP is extremely comprehensive and can provide parents and professionals with detailed information helpful in developing appropriate short-term and long-term goals. It can describe strengths and needs, providing the teacher with information that can be used to develop intervention strategies.

**Parent–Professional Collaboration**

The Pre-CIPP allows both parents and professionals to take equal roles in the assessment process. It provides a vehicle for comparing information from both home and school. The tools are designed to provide parents and professionals with a better understanding and knowledge about normal development.

**Incorporation of a Variety of Assessment Techniques**

Observation of behavior on a day-to-day basis can be provided through parent questionnaires. Performance on professional administered tests can be provided through teacher-administered standardized assessments. Use of skills in interaction with parents can be provided through videotape analysis of parent/child interaction. All of these assessment techniques are utilized to provide a comprehensive picture of the child. Discrepancies are illustrated and, therefore, an avenue for resolving differences in opinion is established.
ASSESSMENT TOOLS USED BY THE COLORADO PROJECT

The assessment tools that have been chosen by the Colorado Project are listed below. However, other assessment procedures and tools can also be incorporated for use with the Pre-CIPP. The Pre-CIPP profile was designed so that the assessment would not be dependent upon the use of any specific tests. The following list should be used as a list of suggestions. The Colorado project is currently developing other instruments. Some conventional instruments, such as measures of maternal bonding, the HOME, reference, and other profiles have previously been used, but interventionists/teachers and parents reported that the information provided was not as useful as the assessments that have remained in the project.

LEARNING POTENTIAL

Minneapolis Child Development Inventory (Irton & Thwing, 1993). Situation Comprehension Subtest

Forty-four items related to nonverbal understanding of and interaction with the environment through observation, discrimination, imitation, and motor behavior (see Table 1). Convert age scores to developmental quotient.

Play Measure

Play scale checklist ranging from 8 months to 5 years of age. Assesses play and language related to the cognitive abilities of young children (see Table 2 for rating scale).

Performance-Based Intelligence Test

A number of intellectual assessments (performance-based tests) are used to assist in approximating the learning potential of young children. If such scores are available from a trained psychologist, scores should be documented on the Pre-CIPP (Wechsler, McCarthy Scales, etc.) (see Table 3 for conversion of standardized scores to rating scale).

DEVELOPMENTAL ASPECTS

Minnesota Child Development Inventory: Personal-Social Subtest

Thirty-four items related to personal and social behavior including initiative, independence, social interaction, and concern for others.

Self-Help Subtest

Thirty-five items relating to self-help skills, including eating, toileting, and dressing. Convert all developmental ages to developmental quotients.

Meadow-Orlans Preschool Inventory (Meadow-Orlans, 1983)

Ratings on 49 items completed by parents and/or professional yielding scores in

| TABLE 1. Conversion Table for Developmental Quotient Derived from Standardized Assessments Using the Formula (Developmental Quotient = Developmental Age/Chronological Age): Conversion of Scores of Standardized Tests in All Developmental Areas |
| --- | --- |
| Rating | Current Functioning |
| 1 | Developmental Quotient is above 100 |
| 2 | Developmental Quotient is between 86 to 100 |
| 3 | Developmental Quotient is between 71 to 85 |
| 4 | Developmental Quotient is between 56 to 70 |
| 5 | Developmental Quotient is between 40 to 55 |
| 6 | Developmental Quotient is below 39 |
TABLE 2. Rating Scale for Cognitive/Play Skills

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demonstrates symbolic cooperative play skills. Is capable of enacting a sequenced story, such as a familiar fairy tale either through dramatic play with peers or with miniature props. Uses appropriate props for setting and creating appropriate language interaction. The story has several episodes and several characters. A main character can be identified.</td>
</tr>
<tr>
<td>2</td>
<td>Child demonstrates the ability to spontaneously generate a logical sequenced story. The story is simple with a single episode. Props are included in play. The story line is easy to follow and minimum components of the story are included. There is minimally a beginning, an action, and a consequence.</td>
</tr>
<tr>
<td>3</td>
<td>Child demonstrates partial ability to generate spontaneous dramatic play sequences. The play is not always complete. The sequence of the actions is not always logically or temporally sequenced. However, the child demonstrates ability to use world knowledge to create novel situations in dramatic play.</td>
</tr>
<tr>
<td>4</td>
<td>Child is capable of dramatic play enacting a sequenced story only after demonstration. The child adds new and different components not in the original demonstration. The essential components are preserved. The dramatic play becomes spontaneous and occurs only within structured teaching.</td>
</tr>
<tr>
<td>5</td>
<td>Child can imitate a short sequence of actions in dramatic play, such as a familiar story, “The Three Pigs.” However, each component of the story must be specifically taught and very few, if any, novel or creative additions are made by the child. Child seems to understand the “gist” of the story.</td>
</tr>
<tr>
<td>6</td>
<td>Child does not engage in any symbolic play either through use of props or through dramatic enactment. Child is at an imitative stage, but can only imitate one or two actions at a time. Child does not seem to have sense of the “whole story” or sequence of events. No spontaneous generation of dramatic play or creative interpretations or additions occur in play.</td>
</tr>
</tbody>
</table>

five scales: sociable, communicative behaviors, impulsive dominating behaviors, developmental lags, anxious, compulsive behaviors, and special items related to hearing loss. Convert percentile to rating scale according to Table 5.

PHYSICAL ASPECTS

Minnesota Child Development Inventory: Gross Motor Subtest

Thirty-four items related to locomotion and behaviors involving strength, balance, and coordination.

Fine Motor Subtest

Forty-four items related to visual-motor skills, from simple eye-hand coordination to complex fine motor behavior. Convert developmental ages to developmental quotients and assign rating according to Table 1.

Auditory Acuity

Convert audiological information to rating scale described in Table 6.

Auditory Skills

Assign a rating for the development of auditory skills according to Table 7.

Speech-Language

Speech Intelligibility and Phonological Speech Evaluation

The quality and variety of phoneme production, intelligibility, and use of suprasegmental features is evaluated by a trained coder. Use the Speech Intelligibility Rating Scale described in Table 8.

Semantics: MacArthur Communication Development Inventory: Words and Sentences

Checklist is completed by parents and provides an estimate of the number of words the child understands, produces, and the types of words the child has in his/her receptive and expressive repertoire. The scale tops out at 600 words or 2-1/2 years of age. Convert developmental age to developmental quotient and assign rating according to Table 1.
TABLE 3. Conversion of Scores from Tests of Cognitive/Performance Intelligence to Chart: Cognitive Status

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Superior Cognitive Abilities (IQ of 120 and above)</td>
</tr>
<tr>
<td>2</td>
<td>Above Average Cognitive Abilities (IQ of 110–119)</td>
</tr>
<tr>
<td>3</td>
<td>Average Cognitive Abilities (IQ of 90–110)</td>
</tr>
<tr>
<td>4</td>
<td>Low Average Cognitive Abilities (IQ of 80–89)</td>
</tr>
<tr>
<td>5</td>
<td>Borderline Intellectual Abilities (IQ of 70–79)</td>
</tr>
<tr>
<td>6</td>
<td>Significantly Limited Intellectual Capacity (IQ below 70)</td>
</tr>
</tbody>
</table>

**Semantics: Expressive One-Word Picture Vocabulary Test-R (Gardner, 1987)**

Designed for children ages 2 through 11, yields expressive vocabulary score. Can be administered in approximately 20 minutes and requires the child to identify pictures. Convert developmental age to developmental quotient and assign rating according to Table 1.

**MINNESOTA CHILD DEVELOPMENT INVENTORY**

*Expressive Language Subtest*

Fifty-four items related to expressive communication, from simple gestural, vocal, and verbal behavior to complex language expression.

*Comprehension-Conceptual*

Sixty-seven items related to language understanding from simple comprehension to concept formulation. Convert developmental age to developmental quotient and assign rating according to Table 1.

**Syntax: Systematic Analysis of Language Transcripts (SALT)**

(Miller & Chapman, 1983)

The intelligibility subsection of this test is used when analyzing videotaped interactions.

**Mean Length of Utterance**

The mean length of utterance in both words and morphemes for both adult and child are analyzed. It is helpful to determine if the adult’s MLU is an appropriate match to the child’s language level and ability to accommodate. The Colorado program adopts the theory that the adult’s length of sentence should be close to but above the child’s length of sentence. Use developmental age corresponding to mean length of utterance. Convert developmental age to developmental quotient and assign rating according to Table 1.

TABLE 4. Rating Scale for Special Characteristics that Interfere with Academic, Language, and/or Social-Emotional Development

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Child has no special characteristics</td>
</tr>
<tr>
<td>2</td>
<td>Child has special characteristic but it does not interfere with educational progress</td>
</tr>
<tr>
<td>3</td>
<td>Child has special characteristic that provides minimal obstacles to educational progress</td>
</tr>
<tr>
<td>4</td>
<td>Child has special characteristic that provides moderate obstacles to educational progress</td>
</tr>
<tr>
<td>5</td>
<td>Child has special characteristic that provides severe obstacles to educational progress</td>
</tr>
<tr>
<td>6</td>
<td>Child has special characteristic that provides profound obstacles to educational progress</td>
</tr>
</tbody>
</table>

Special characteristics: Special characteristics may include such things as a secondary handicapping condition, health conditions that interfere with educational progress, and/or a spoken language other than English being the primary language of the child. Note: Some hearing-impaired children also have visual acuity problems and/or some other type of obstacle to typical development. Please take secondary handicapping conditions into consideration in this section. Circle the rating which you feel best reflects this area. Make comments below as you feel appropriate.
TABLE 5. Conversion Table for Meadow–Kendall Social-Emotional Inventory (other similar inventories could be used): Social-Emotional Development (Meadow–Kendall)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student scores from the 80th to the 100th percentile. No IEP/IFSP needed related to social-emotional need</td>
</tr>
<tr>
<td>2</td>
<td>Student scores from the 65th to the 79th percentile. An IEP/IFSP may be needed to address specific areas.</td>
</tr>
<tr>
<td>3</td>
<td>Student scores from the 50th to the 64th percentile. An IEP/IFSP is needed to address social-emotional needs.</td>
</tr>
<tr>
<td>4</td>
<td>Student scores from the 35th to the 49th percentile. An IEP/IFSP is needed to address social-emotional needs.</td>
</tr>
<tr>
<td>5</td>
<td>Student scores from the 20th to the 34th percentile. An IEP/IFSP is needed to address social-emotional needs.</td>
</tr>
<tr>
<td>6</td>
<td>Student scores from the zero to the 19th percentile. An IEP/IFSP is needed. Intensive services related to social-emotional needs may be needed.</td>
</tr>
</tbody>
</table>

**Brown's Stages**

This measure indicates the stage and age range for the child's use of morphemes. Convert developmental age to developmental quotient and assign rating according to Table 1.

**Sentence Pattern Production**

Information regarding the parts of speech used by the parent/teacher and by the child is provided. The type of sentence structures used in conversations and the verb tenses used are analyzed and described. Sometimes dialogue of the adult conversational partner does not include use of adjectives or adverbs. Occasionally, the adult is using only two verb tenses. Additional verb tenses may be emphasized in the narration of the adult and child.

**Pragmatics: Communication Interaction**

Feedback on the quality of communication interactions with other speakers is given. An adapted Cole and St. Clair-Stokes analysis (1984) is used by the Colorado Project. Although this information does not appear on the profile, it is provided with the assessment summary and provides the intervention team with additional information that can be used to determine teaching strategies. This coding system describes the turn-taking characteristics, the attention-getting success, and the modality used by the parent/teacher and by the child to determine communicative match.

**Pragmatics Inventory**

(Adapted from Halliday, 1975)

A questionnaire that identifies skills in seven areas of pragmatics. If child is not yet at this communicative skill level, the Communicative Intention Inventory (Coggins & Carpenter, 1981) is used. Analyzes communicative intentions. The total number and number of categories increases with age; a shift from nonverbal to predominantly verbal (spoken and/or signed) responses increase with age. Assign rating according to the scale in Table 9.

**SUMMARY OF A PRESCHOOL CHILD'S DEVELOPMENTAL PROFILE**

The results of the Pre-CIPP evaluation are summarized on a graph referred to as the developmental profile. This profile is divided into four categories: learning potential, developmental skills, physical skills, and speech/language skills. Each category reports the results of 4 to 10 different assessments. Specific assessment tools are...
TABLE 6. Rating for Audiological Acuity

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Average pure-tone loss in speech range (500 to 2000 Hz) 20–35 dB in better ear; or Average high-frequency pure-tone loss, 35–50 dB in better ear at two or more frequencies of 2000 . . . 3000 . . . 4000 . . . 6000; or Permanent unilateral loss, 35–50 dB in speech range. No IEP/IFSP needed related to hearing.</td>
</tr>
<tr>
<td>2</td>
<td>Same audiological criteria as Rating 1. However . . . An IEP/IFSP is needed related to hearing words.</td>
</tr>
<tr>
<td>3</td>
<td>Average pure-tone loss in speech range (500 to 2000 Hz) 35–50 dB in better ear; or Average high-frequency pure-tone loss 50 dB or greater in better ear at two or more frequencies of 2000 . . . 3000 . . . 4000 . . . 6000; or Permanent unilateral loss of 50 dB or greater in speech range. An IEP/IFSP is needed related to hearing needs.</td>
</tr>
<tr>
<td>4</td>
<td>Average pure-tone loss in speech range (500 to 2000 Hz) 50–65 dB in better ear. An IEP/IFSP is needed related to hearing needs.</td>
</tr>
<tr>
<td>5</td>
<td>Average pure-tone loss in speech range (500 to 2000 Hz) 65–85 dB in better ear. An IEP/IFSP is needed related to hearing needs.</td>
</tr>
<tr>
<td>6</td>
<td>Average pure-tone loss in speech range (500 to 2000 Hz) greater than 85 dB in better ear</td>
</tr>
</tbody>
</table>

completed by coders who watch the videotape, or by the parents and preschool teacher who complete questionnaires.

The developmental profile provides a descriptive rating for each assessment measure. To accomplish this, each assessment tool is first scored. The results are then equated to a developmental age. The developmental age is divided by the chronological age of the child to determine the developmental quotient. The rating on the developmental profile is assigned according to conversions listed in Table 1.

The example presented here is of a 3 year 11 month old boy. He has a severe to profound hearing loss that was diagnosed at approximately 8 months of age. A summary of assignment of all ratings is depicted in the Colorado Individual Performance Profile (Table 10).

**Learning Potential**

There are four measures in this category. They are: the Situation Comprehension subtest of the Minnesota Child Development Inventory (MCDI), a play measure, a performance IQ score, and the presence of special characteristics in addition to the hearing loss.

**Cognitive Skills**

Justin received a rating of 3 on the Situation Comprehension Subtest. This test was completed by the parents and the preschool teacher. A rating of 3 means that Justin’s score is at 80% of age level. His raw score was at the 38 month level, which is 9 months below his chronological age.

**Play Measure**

A rating of 3 was assigned on the Rating Scale for Cognitive/Play Skills (Table 2). A rating of 3 means that the “child demonstrates partial ability to generate spontaneous dramatic play sequences.” This rating of 3 is typical of a child a bit younger than Justin. The rating corroborates that Justin’s play skills are at 80% of his chronological age.

**Performance IQ**

A test of performance IQ was not administered.
TABLE 7. Rating for Development of Auditory Skills

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uses audition for speech/language communication. Can function in communication situations (classroom environments and home) utilizing audition alone. Functions communicatively at the level of chronological age peers with normal hearing. IEP/IFSP goals may not be needed in this area.</td>
</tr>
<tr>
<td>2</td>
<td>Functions in hearing environments with minimal difficulties using auditory skills alone. Has some difficulty in noisy environments. Primarily an auditory learner but may use some visual cues. IEP/IFSP goals are needed in this area.</td>
</tr>
<tr>
<td>3</td>
<td>Child is predominantly an auditory learner. In quiet, has the capability of discriminating almost all of the sounds of the English language. Has moderate difficulty in noisy situations. Utilizes visual cues to enhance comprehension. Child uses a 75 to 25% audition to vision ratio for communication. IEP/IFSP goals are needed in this area.</td>
</tr>
<tr>
<td>4</td>
<td>Auditory skills are sufficient to facilitate speech production. Comprehension of speech requires both visual and auditory skills. Child communicates best in auditory-visual environments with approximately a 50 to 50% reliance upon audition and vision. IEP/IFSP goals are needed in this area.</td>
</tr>
<tr>
<td>5</td>
<td>Auditory skills are sufficient for signal-warning awareness and awareness of gross environmental sounds, duration, inflection, and rhythm of speech. IEP/IFSP goals are needed in this area.</td>
</tr>
<tr>
<td>6</td>
<td>Auditory skills are at a level which is insufficient for the purposes of communication through speech. Child communicates by processing visual cues. IEP/IFSP goals are needed in this area.</td>
</tr>
</tbody>
</table>

Special

This rating scale is located in Table 4. It is completed by the parents and the preschool teacher. This scale identifies any special learning needs in addition to the diagnosed hearing loss. This could include gross motor needs, a learning disability, oral motor challenges, a vision problem or impairment, or socio-economic needs that could affect learning potential. Justin received a rating of 1, which means that he “has no special characteristics.” Justin does not have any identified special needs other than his significant hearing loss.

Summary

In the category labeled “learning potential” Justin displays a small delay in the cognitive area. Because he received a rating of 3, we know that he is functioning at 80% of chronological age. The teacher and parents can alter Justin’s intervention

TABLE 8. Rating Scale for Speech Intelligibility

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speech is consistently intelligible to peers, to older children, and to adults unfamiliar with the speech of deaf and hearing-impaired children. No IEP/IFSP is needed related to speech skills.</td>
</tr>
<tr>
<td>2</td>
<td>Speech is intelligible to peers, to older children, and to adults unfamiliar with the speech of deaf and hearing-impaired children, even with minor errors. An IEP/IFSP is needed to maintain or improve communication skills.</td>
</tr>
<tr>
<td>3</td>
<td>Speech is intelligible to listeners but may be difficult for the listener to understand. An IEP/IFSP is needed to improve communication skills.</td>
</tr>
<tr>
<td>4</td>
<td>Speech is intelligible to the listener once familiar with child’s articulation pattern. An IEP/IFSP is needed to improve communication skills.</td>
</tr>
<tr>
<td>5</td>
<td>Speech is often unintelligible even when familiar with the child’s articulation pattern. An IEP/IFSP is needed to improve communication skills.</td>
</tr>
<tr>
<td>6</td>
<td>Speech is unintelligible to most listeners. An IEP/IFSP is needed to improve communication skills.</td>
</tr>
</tbody>
</table>
TABLE 9. Rating Scale for Pragmatic Language Skills

<table>
<thead>
<tr>
<th>Rating</th>
<th>Current Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skills in the following categories are present, quite good, appropriate and flexible. Skills may exceed performance of peers at same chronological age. Instrumental (requests) = “I want…” Regulatory (commands) = “Do as I tell you…” Interational (conversational) = “Me and you…” Personal (feelings) = “Here I come…” Heuristic (questions) = “Tell me why…” Imaginative (role play) = “Let’s pretend…” Informative (explains) = “I’ve got something to tell you…” IEP/IFSP goals may not be necessary.</td>
</tr>
<tr>
<td>2</td>
<td>Skills in the seven categories are present and appropriate for age with minor deviations. Child demonstrates good pragmatic skills but needs slight modification through explicit instruction. However, child is able to quickly generalize to novel situations. An IEP/IFSP is needed to address pragmatic skills.</td>
</tr>
<tr>
<td>3</td>
<td>Skills in the seven categories are barely adequate, not consistent, or the child is unable to generalize to a variety of contexts. Child needs explicit instruction. Child’s skill is more dependent upon social awareness than on language skills. An IEP/IFSP is needed to address pragmatic skills.</td>
</tr>
<tr>
<td>4</td>
<td>Skills are at an anticipated level considering language and communication skills. Child demonstrates understanding of the social skill but lacks language and speech/sign skills. An IEP/IFSP is needed to address pragmatic skills.</td>
</tr>
<tr>
<td>5</td>
<td>Skills in the seven categories are emerging but may be deviant and inadequate for communication purposes. Development of pragmatic language skills is not only dependent upon social awareness and language development, but there appear to be emotional issues affecting pragmatic development. An IEP/IFSP is needed to address pragmatic skills.</td>
</tr>
<tr>
<td>6</td>
<td>Skills in the seven categories are not present. Social, emotional, language, and communication skills are so delayed that sufficient foundation for the establishment of pragmatic language skills has not been developed. An IEP/IFSP is needed to address pragmatic skills.</td>
</tr>
</tbody>
</table>

program in light of this information. Specific play skills can be modeled that are at a higher developmental level. Justin’s interaction with other children can be monitored. The intervention team can direct the play of the children to include activities and scenarios that are closer to Justin’s chronological age. The information gleaned here gives us the opportunity to fine tune the intervention program.

Impaired Students—Preschool form is used.

**Social-Emotional**

Justin achieved a rating of 3 on the Social Emotional Subtest of the MCDI. This indicates that Justin’s social emotional skills are at 80% of age level. Justin is 3 years 11 months old. His social emotional skills are at approximately 38 months of age.

**Meadow-Kendall Social Emotional Assessment Inventory**

This test was not administered.

**Self-Help**

This score is taken from the Self-Help subtest of the MCDI. Justin achieved a rat-
**TABLE 10. Colorado Individual Performance Profile Summary of Case Study: Summary of Assessment Results for Case Study**

<table>
<thead>
<tr>
<th>Child's Name</th>
<th>Justin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth</td>
<td>Jul 90</td>
</tr>
<tr>
<td>Age</td>
<td>3.5</td>
</tr>
<tr>
<td>Date of Profile</td>
<td>6/91</td>
</tr>
</tbody>
</table>

**Notations about additional disabilities and/or special circumstances**: N/A

Does child use sign language? Yes
If yes, how long has child used signs? 2 yrs
What system? PSE

**Recommendation for Service Based on Pre-CIPP Process**

Preschool Services, Specialized. For hearing impaired.

You will receive a copy of a graph with your assessment results from the University of Colorado, Boulder after the videotape analysis is complete.
ing of 1. This rating means that Justin’s self help skills are at or above his chronological age.

**Summary**

In this category, Justin functions at age level in the area of self-help. However, there is a slight delay in his development of social-emotional skills. The Pre-CIPP is not intended to be a diagnostic instrument. However, the reports from the parents and teacher suggest that social emotional development is slightly below age level. Again, this gives the parents and intervention team an opportunity to individualize activities and interactions to enhance Justin’s social skills. The family and teacher may want to complete the Meadow-Kendall Inventory to obtain more information. The Self-Help rating of 1 indicates that Justin has the potential to function at a higher cognitive level and to use more sophisticated play routines.

**Physical**

There are four measures in this category. Two of the measures are from subtests of the MCDI. One measure reports the results of audiometric testing that is done in the child’s community. The fourth measure is a questionnaire of functional auditory skills that is completed by the parents and the teacher.

**Gross Motor**

Justin has a rating of 3 on the Gross Motor Subtest of the MCDI. Previous to this evaluation, he had no known delays in gross motor skills. A rating of 3 indicates that his skills are at 80% of his chronological age, which is a small delay, but may be significant.

**Fine Motor**

The Fine Motor Subtest of the MCDI shows that Justin’s fine motor skills are at or above age level.

**Auditory Acuity**

There are two ratings for this area. One reports Justin’s unaided thresholds and the other his aided thresholds. Audiological information is converted to a rating by measuring the average pure tone thresholds in Table 6. Justin’s average pure tone loss in the speech range in the unaided condition is greater than 85 dB in the better ear. This is converted to a rating of 6. When Justin’s aided thresholds are considered, he receives a rating of 4.5 This means that his aided average pure tone loss in the speech range is in the 50–85 dB range. This checklist is listed as “Audiological Acuity” in Table 6.

**Functional Auditory Skills**

An evaluation of functional auditory skills is also reported. A copy of this measure is listed in Table 7 as “Rating for Development of Auditory Skills.” Justin obtained a rating of 5 on this measure, which indicates that his “auditory skills are sufficient for signal-warning awareness and awareness of gross environmental sounds, duration, inflection, and rhythm of speech.”

**Summary**

There are two concerns in this area. One addresses the delay in gross motor skills and the other looks at Justin’s auditory skills. Until this time, there was never a suspicion of a delay in gross motor skills. The MCDI indicates that there may be a problem with gross motor development. As a result of this Pre-CIPP assessment process, the parents and the intervention team plan to contact a physical therapist who will observe Justin. Children with hearing loss sometimes exhibit sensory integration difficulties that can also be manifested as delays in gross motor development. The physical therapist needs to be familiar with neuromotor development and sensory integration.

The second consideration concerns Justin’s auditory thresholds. He has a severe to profound hearing loss. Even his
aided thresholds do not give him the ability to hear specific speech sounds. When the intervention team reviews the auditory results, they need to review the amplification Justin is using and the auditory training program he is receiving. Is Justin fitted with optimal amplification? Has he used amplification consistently? And if so, for how long? Has an auditory training program been a consistent part of Justin's intervention program? Are the parents incorporating auditory training techniques into his daily routine? These questions are searching for an explanation for the rating of 5 on the auditory skills checklist. Justin is not using his residual hearing to understand speech. Is this contributing to the delay in social emotional skills that was identified on the MCDI? Can he do better? Is this a priority for the parents? If it is, how can we improve his auditory skills?

**Speech/Language Skills**

There are 10 measures in this category. Because the Pre-CIPP originated as an evaluation for children with hearing loss, the area of speech and language development came under fine scrutiny. The intervention team chose to complete seven measures in this category. The ratings range from 3.5 to 6, which shows that Justin's speech and language skills are at 70% of age level in some areas and at less than 40% of age level in other areas.

**Speech**

Speech intelligibility is measured by using Table 8, Rating Scale for Speech Intelligibility. This quick checklist gives six different people the opportunity to rate Justin's speech. The parents, the most familiar listeners, rate their child. The preschool teacher or therapist rates the child. This person is likely familiar with the speech characteristics of children with hearing loss. The four coders independently rate the child's speech intelligibility. These four people are considered unfamiliar listeners.

In Justin's case, all six people considered Justin's speech as "unintelligible to most listeners," giving him the rating of 6.

Justin also received a rating of 6 for the number of consonant phones he produced during a 30 minute speech sample. This sample represented sounds that were produced spontaneously and in imitation. During the sample, Justin produced eight consonants. Use of this number of consonants is typical of a 12-month-old child.

**Summary**

The intervention team has the challenge to explain the discrepancy between Justin's aided hearing, his functional auditory skills, and his low rating for speech production. It is beyond the scope of this article to investigate specific reasons for the discrepancy or to list strategies for intervention. But, the intervention team reported that they would review this information with the family. Either more time needs to be dedicated to develop auditory and speech skills or expectations for Justin's use of listening and speech need to be changed. The changes in programming may involve changes in amplification, intensity of speech and auditory training therapy, and the inclusion of a family-centered component to auditory and speech development.

**Semantics**

Three measures were completed in this area: The MacArthur Communicative Development Inventory: Words and Sentences and two subtests of the MCDI. The parents and the preschool teacher complete the three measures.

Justin has a rating of 3.5 on the Comprehension of Concepts subtest of the MCDI. These language comprehension skills are at 70% of age level, which is 33 months developmentally. On the Expressive Language subtest of the MCDI, Justin received a rating of 4.5, which is at 50% of age level or 24 months developmentally. A rating of 4.5 was also received on the MacArthur test of vocabulary use.
Syntax

Justin has a mean length of 1.13 words per utterance according to the language transcript obtained by direct observation of the videotape. Using the Pre-CIPP conversion charts, this is a skill at the 12–26 month age level. This becomes a rating of 5. A rating of 5 means that Justin's use of multiword utterances is at 40% of his chronological age.

Pragmatics

The parents and teacher completed a checklist of pragmatic skills. The results of this protocol are summarized in Table 9 in the Rating Scale in Pragmatic Language Skills. The number of items completed gave Justin a rating of 6 for the development of pragmatics. A rating of 6 suggests that "skills in the seven categories are not present. Social emotional, language, and communication skills are so delayed that sufficient foundation for the establishment of pragmatic language skills has not been developed."

Summary

There is a lot of information summarizing Justin's speech and language status. We have reviewed the areas of audition and speech and know that there is a relatively direct correlation between auditory thresholds and the development of speech skills. However, it is more challenging to explain or justify the discrepancy between Justin's language skills, which are rated at 3.5–6 and his play skills, which are rated a 3. We expect communication skills to be commensurate with cognitive skills. Has Justin's hearing loss affected the development of all receptive and expressive communication, both verbally and nonverbally? Is he receiving the appropriate amount of special services? Is the program using a method of communication that capitalizes on his strengths? Are the specific intervention strategies that are being used the most effective ones for him? Are Justin's social-emotional skills being affected by the discrepancy between his learning potential and his language/communication skills?

These questions are academic in the context of this article. But they are germane in the context of an IFSP or IEP meeting. Just as the results of the Pre-CIPP are gleaned through an evaluation process, the IFSP or IEP meeting is a process whereby the results of the evaluation can be discussed. Goals, objectives, and parents' dreams can be discussed, listed and prioritized. Intervention can be adapted to reflect these concerns and priorities. Program placements can be made with objective information. Recommendations for program placement are provided in Table 11. These recommendations represent the collective judgment of over 100 professionals providing services to children with educationally significant hearing loss between the ages of 3 to 5 years of age. In Colorado, 80% or more of the children with characteristics described across categories are currently in the recommended service delivery options. The PRE-CIPP was designed to provide a guideline for placement decisions. Individual situations and characteristics must always be taken into consideration. There are individual cases who have demonstrated success in alternative placements. It is our hope that the PRE-CIPP will provide a framework for discussions with parents and professionals for optimal placement decisions.

Acknowledgments

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### TABLE 11. Recommended Placement According to Summary of Overall Ratings

<table>
<thead>
<tr>
<th>Most Ratings of 1</th>
<th>No IEP, No Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Ratings of 2</td>
<td>IEP regular preschool, plus 1 to 4 hours a week from trained professional in hearing loss</td>
</tr>
<tr>
<td>Most Ratings of 3</td>
<td>IEP regular preschool plus 1 to 4 hrs. a week from professional trained in hearing loss OR IEP preschool services specialized for children with educationally significant hearing loss</td>
</tr>
<tr>
<td>Most Ratings of 4, 5, or 6</td>
<td>IEP preschool services specialized for children with educationally significant hearing loss</td>
</tr>
</tbody>
</table>

Compare ratings for potential (cognitive, self-help, special characteristics) with language, social-emotional, and academic skills.

### REFERENCES


ARTICLE FOUR

SELF-ASSESSMENT QUESTIONS

1. The Pre-CIPP was not designed for:
   (a) placement criteria for a variety of service delivery options
   (b) incorporating parents into the assessment process
   (c) diagnosis of a hearing loss
   (d) developmental profile of a child’s progress over time

2. The Pre-CIPP utilizes which type of test scores on the Profile:
   (a) percentile ranks
   (b) scaled scores
   (c) developmental quotients
   (d) developmental ages

3. The Pre-CIPP does not place an emphasis upon:
   (a) receptive language evaluation
   (b) expressive vocabulary
   (c) pragmatic analysis of language
   (d) expressive syntax and morphology

4. The Pre-CIPP is:
   (a) an interaction model of assessment
   (b) a tool that investigates each developmental skill as separate from all other functioning
   (c) a tool that can be done by an individual rather than a team
   (d) a tool that discourages parent participation

5. Speech intelligibility rating on the Pre-CIPP
   (a) should be done by the teacher only
   (b) is taken from a videotaped/audio-taped sample of speech only
   (c) is an objective rating based upon percentage understood
   (d) is a subjective rating by multiple raters