WISCONSIN DEPARTMENT OF
Public Instruction

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Assessment of Speech: New Considerations
Question and Answer Document

General Questions

Are most of the current tests we use based on the 'old' norms?

Speech-language pathologists (SLPs) should review the Technical Manuals of the norm-referenced assessments they use in order to determine the processes used by the test makers to standardize their assessment. Many assessments create their own normative data during the test creation process (see Table 1, p. 2158, Crowe and McLeod 2020) and were not based on Smit et al. 1990 norms.

How and when do we start using the Crowe and McLeod 2020 speech sound development norms when considering Speech or Language Impairment in Wisconsin?

Since the report of new norms is published (Crowe & McLeod 2020), it would be appropriate to use immediately during special education evaluations.

Questions About the New Norms (Crowe & McLeod 2020)

Is 90 percent mastery of sounds at the isolation or word level?

The age at which sounds are reported as mastered in the Crowe & McLeod 2020 study is measured at the word level.

Was word position considered in the Crowe & McLeod 2020 study?

This study was a follow up study to the McLeod and Crowe review in 2018 that looked at studies of consonant acquisition across 27 languages. The data reported by Crowe and McLeod in 2020 was a review of studies conducted in the United States of children acquiring English. The data reviewed and reported was intentionally shared in a similar

format of the 2018 article. All of the studies reviewed included targeted sounds in word initial and word final positions.

Why are consonant clusters not reported in the Crowe and McLeod 2020 study?

Again, the purpose of the Crowe and McLeod 2020 study was to review US English-only studies and to report findings in a similar method as their 2018 review. McLeod & Crowe (2018) reviewed 64 studies across 31 countries and 27 languages and did not consider consonant clusters. Other studies of consonant clusters in Germanic languages (which include English) have found that consonant clusters are slower to be mastered than consonant singletons (Másdóttir, McLeod, and Crowe 2021).

What are the new norms for "vocalic R"?

The Crowe and McLeod 2020 study did not break out vocalic R. Dr. Jonathan Preston from Syracuse University wrote to Angie Neal at South Carolina Department of Education on December 15, 2020 in response to this question and shared the following:

> "I'd expect /ɚ/ to emerge along with /r/ - the articulatory requirements are the same to produce rhoticity in either context. The primary difference is in duration (with /ɚ/ taking longer to say, so for some kids /ɚ/ is easier to master than the consonantal /r/). However, we see kids who master the consonantal /r/ before the vocalic /ɚ/ and kids who do the reverse, and there isn't a drastic difference (i.e., it's not a 2 year separation between mastery of one before the other). I think moving towards the Crowe & McLeod norms is a good idea as it encompasses more data than using a single test, although with all norms a "hard cutoff" for any sound is usually an overly rigid interpretation of the data for clinical purposes (e.g., a 7 year old who misarticulated /r/...but who is highly stimulable is a child I'd be less concerned about than a 6 year old who misarticulated /r/ and is not at all stimulable).
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> The Crowe & McLeod norms include the GFTA as part of their sample. They also indicate that some of the studies they used included both initial and final /r/, but some only included initial /r/ (much of this decision based on whether the developers of the test prefer the /r/ or the /ɚ/ symbol at the ends of words like "fear"). So, to some extent, the Crowe & McLeod norms encompass both /r/ and /ɚ/."

Stimulability

Why has stimulability been explicitly labeled as an assessment tool?

Stimulability is not new and is documented by most of the articles referenced here as a tool that goes back to the 1950s, used by many SLPs to identify speech sound disorders. Miccio et al. (1999) define stimulability as "a child's ability to imitate a sound absent from [their] phonetic inventory immediately following an examiner's model." Sounds that children are stimulable for correct production have been found to undergo the most change in the absence of treatment (Miccio et al. 1999). This information is valuable when considering students eligible for services and when planning treatment. In addition, Skahan et al. (2007) conducted a nationwide survey and found that more than 75.4 percent (i.e., 244 SLPs) of the SLPs surveyed "always" included stimulability testing as part of their assessment for speech sound disorders.

How should we consider stimulability? Do we consider stimulability just at the syllable level, word level, or sentence level? Just in the initial position, medial position, or final position? Or do we probe stimulability across all word positions?

Stimulability activities on various instruments include asking the student to repeat a model of a sound in error in isolation and at the syllable level. Some also probe for correct production at the word and sentence level. The syllable level probes do include the target sound in different positions (e.g., syllable initial and syllable final).

How much 'weight' should we put on stimulability of erred sounds when assessing for initial criteria?

Stimulability probes should be one assessment tool when conducting an evaluation for speech sound disorders. The child's ability to correctly produce sounds in different contexts given visual and verbal cues from the evaluator is an important factor in considering eligibility for services.

Where did the cutoff of 30 percent come from for stimulability?

In creating a quick stimulability probe, Miccio (2002) directed SLPs to only probe for sounds the child produced incorrectly in spontaneous speech. The probe provides opportunities for the probing of sounds in a variety of contexts. Given previous findings that sounds children are stimulable for undergo change in the absence of treatment (Miccio et al. 1999), she indicated that sounds stimulable some of the time (i.e., at least 30

percent of contexts), were “presumed to be stimulable” (Miccio 2002, p. 225). This criteria was also used by Storkel (2018) in her stimulability probe.

Intelligibility

In calculating intelligibility, should we indicate a "plus" for each word understood regardless of any errors and a "minus" for the words we can’t understand? Or should we be using a whole word accuracy, PCC, etc.?

Intelligibility guidelines include transcribing a sample and allowing the SLP three attempts to understand what a student says. If after three attempts the SLP can not understand the student, they should mark that word or syllable as unintelligible.

This is in contrast to accuracy and percentage of consonants correct (see questions and answers below).

If consonants are distorted (i.e., they can be understood but are not correct), is the percentage of consonants correct (PCC) affected?

Yes. When consonants are distorted, they may not affect overall intelligibility but would affect PCC.

The criteria sheet states: "The delay in speech or sound production significantly affects the intelligibility of the child's speech." Can we use PCC to qualify students?

PCC is the severity of speech sound delay and is not the same as intelligibility. A student’s intelligibility must be affected in order to qualify for services in schools.

Case Study Questions

What are the considerations for dismissal at reevaluation time if a student has mastered all but one speech sound (e.g., / l /)?

When conducting a reevaluation for a student, it is important to consider if the student continues to need special education services. The IEP team would consider current intelligibility and impact on social, emotional, or academic performance in making that determination.

Should students with single sound errors stay on or be added to caseload? For example, we have a second grader that has been receiving services for a few years. She is very close to dismissal, but only has "th" left. She is an excellent student and the error does not impact her socially. In another example, what if we have a teenager who only has /r/ errors. Should they be added?

Student situations should be considered on a case-by-case basis. At the time of reevaluation, the team needs to consider whether the student continues to need specially designed instruction. Data that will help in informing the decision would include the student's intelligibility and the impact of the speech delay on social, emotional, or academic performance.

Should SLPs provide services for students that other IEP team members are also providing?? This could be in terms of phonological awareness skills, auditory discrimination, comprehension, etc. If they receive these services from other school staff, should SLPs also have these students on their caseload?

As far as overlapping services with other professionals, the SLP should consider the following questions:

- Are these services what the student needs in order to make progress on their goals?
- Are these unique services that the SLP provides?

These are conversations to have with other IEP team members, as who provides which service may vary by individual skill sets and areas of expertise. Another option for the IEP team to consider is whether the SLP can provide training or consultation as documented through the Program Modifications and Supports section of the IEP Program Summary.

In 4K, is it appropriate to assess and consider a student's phonological awareness as a sign of educational impact?

Students are just beginning to be taught phonological awareness skills in 4K. Therefore, it would be difficult to use this as evidence as a sign of educational impact in students before Kindergarten. For very young students (i.e., three and four year olds), academic impact is not as related to reading but would be related to effective communication and intelligibility.

SLPs may assess phonological awareness skills as potential evidence of educational impact for older students (i.e., older 4 year olds, Kindergarteners, first graders). The research

does not clearly correlate speech sound delays with phonological awareness delays, although students with speech as well as language difficulties tend to have a higher risk of also demonstrating lower phonological awareness skills (Rvachew et al. 2007). The assessment of phonological awareness skills before second grade has been found to predict later reading success (Hogan et al. 2005).

Phonological awareness skills should not be confused with phonemic awareness skills.

"Phonological awareness is the awareness of the sound structure of a language and the ability to consciously analyze and manipulate this structure via a range of tasks, such as speech sound segmentation and blending at the word, onset-rime, syllable, and phonemic levels. Phonological awareness is the umbrella term; phonemic awareness applies when the units being manipulated are phonemes, rather than words, onset-rime segments, or syllables"(ASHA, n.d.a).

Phonemic awareness skills are known to be foundational skills for reading achievement (Ehri et al. 2001; Ehri 2020). However, phonemic awareness skills are only one component of reading instruction. See the following for more information:

- Wisconsin's Standards for English Language Arts, 2020 (particularly the standards for reading foundational skills and Appendix 2) at https://dpi.wi.gov/ela
- Professional learning about reading foundational skills at https://dpi.wi.gov/reading/professional-learning/reading-foundational-skills for more information.

Phonological awareness skills should also not be confused with phonological process use (now termed "phonological pattern use"). "Phonological disorders focus on predictable, rule-based errors (e.g., fronting, stopping, and final consonant deletion) that affect more than one sound" (ASHA n.d.b). When young students are highly unintelligible and demonstrate errors on several speech sounds, it may be of value to assess phonological pattern use versus articulation errors.

If students do not qualify, what resources can be provided to students, teachers, and families?

Wisconsin DPI has also created the Children's Articulation and Speech Sound Development Infographic to share with families and parents about developmental milestones of speech sounds.

Please also see the previous speech sounds FAQ, Frequently Asked Questions about the Speech or Language Impairment Criteria and Making Eligibility Determinations in the area of Speech or Sound Production, for additional questions.

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