TEC Podcast #3 Holly Lane and Paige Cullen Pullen, "Blending Wheels: Tools for Decoding Practice," *TEACHING Exceptional Children, 48*(2), pp. 86–92.

Lorraine: Welcome to this *TEACHING Exceptional Children* podcast. I'm Lorraine Sobson, publications manager for the Council For Exceptional Children. Today I'm speaking with Holly Lane and Paige Cullen Pullen. Holly is an associate professor in the College of Education at the University of Florida. Paige is an associate professor at the University of Virginia's Curry School of Education. They are the authors of a recent article in teaching exceptional children entitled, "Blending wheels: Tools for decoding practice." Paige and Holly, thanks for joining me.

Paige: Thank you so much for having us, Lorraine.

Holly: We're really happy to be here; thank you for having us.

Lorraine: Holly, in the beginning of the article you talk about the *alphabetic principle*, how letters and sounds work together to form words. You say that students need to master this in order to be successful at decoding. Can you describe the transitional stages in this process?

Holly: Sure. Simply put the alphabetic principle is the idea that letters and sounds work together in systematic ways to form words, so understanding that basic idea is really fundamental to the development of decoding skills. When children are just beginning to learn to decode words, they'll start using letters and sounds but generally not all of the letters and sounds in a word. For example, a child might have previously encountered the word *big* and then that same child might thing that every word that begins with a B is the word *big*. This is [typically what we refer] to as the *partial alphabetic phase*. As they become more proficient in decoding, children begin to use every letter in a word to determine what the word is. That is, they realize that each of the … letters, or letter combinations, represent sounds. The sounds are to be blended together to form words. As they look at a word they notice all of the letters in the word. For example, they may notice that *bag* and *bug* and *bit* and *bid* all have similarities with *big*, but they aren't the same word. That's when they've reached what we call the *full alphabetic phase*, when they're able to say the sounds that represent all of the letters of the word and can blend them to read the word. They've progressed from the partial alphabetic phase to the full alphabetic phase, which is what we're trying to accomplish.

Lorraine: Paige, how does phonemic awareness fit into the picture?

Paige: Phonemic awareness is important because in order to move to that full alphabetic phase you have to have an understanding of the sound system of language. That is, you have to have a conscious sensitivity to the phonemes, which are the smallest

units of sound in spoken language. Phoneme awareness includes all kinds of phoneme manipulation—detecting, matching, blending and segmenting the sounds in words separate from print. Being able to manipulate sounds is an essential precursor to initial decoding skill development.

Once a child can manipulate words with two or three sounds, and you can add letters to those sounds, it makes phonemic awareness instruction more effective. However, children need to be able to think about sounds separate from print first. The most important phonemic awareness skills are blending and segmenting.

Lorraine: In the article you also reflect on research in this area. Can you describe how correlational research has influenced intervention research? How has this in turn influenced teaching strategies in these areas of phonemic awareness and phonics?

Paige: This is a topic that I like to address in my reading methods courses so that students understand the difference between correlational research and intervention research. Correlational research demonstrates a relationship between variables. Intervention research demonstrates a causal relationship between two variables. For example, early research on phonological awareness was correlational. That is, it demonstrated that phonological awareness and reading achievement were related. Those children who had good phonological awareness typically were good readers, and those who had low levels of phonological awareness typically had poor reading skills.

In other words there was a relationship or correlation between the two variables. This research was important because it led to intervention research. Researchers said, "If there's a strong relationship between reading and phonological awareness, perhaps intervention in phonological awareness will improve reading." In other words, if the relationship is strong perhaps there's a causal relationship between the two. That's exactly what happened: Researchers began implementing interventions in phonological awareness and measuring improvements in reading.

In this way researchers measured the causal relationship between phonological awareness and reading. The findings were clear: Students who received phonological awareness training performed better in reading than those who did not receive the phonological awareness training. This is establishing a causal relationship between the two variables.

Lorraine: Okay. Now [that] we've set the stage, I'd like to talk a little bit about the strategy you describe in the article, blending wheels. Holly, what is a blending wheel? How does it fit into this picture of sounds and letters?

Holly: A blending wheel is just three pieces of card stock cut into different-size concentric circles, connected in the middle with a fastener. On each wheel you have letters written so that they can be aligned to form words. It's a little hard to describe without a picture but I'm going to do my best. The inner wheel has initial consonants of consonant clusters, the middle wheel has vowels or vowel teams, and the outer wheel has final consonants, or consonant clusters.

By spinning one of the wheel you can change one of those sounds, the initial, medial, or final sound. For example, you may keep the vowel and final sound the same and spin the inner wheel to change the initial sound. In that case you might change *bit* to *sit* to *kit* to *lit* and so on. If you spin the middle wheel instead, you might change *bit* to *bat, bet, beat, bait*, and so on. Spinning the outer wheel might change *bit* to *big*, *bid*, *bib* and *bin*. Depending on the letters that you have on your wheel, you might encounter nonsense words such as *bif* or *bim*.

They're really quite simple to make. You begin by measuring and cutting three circles. The largest circle should be about 2 inches larger than the smaller circle. Once you have those circles cut out, you draw lines on each one—kind of like a pizza, generally eight slices would work best, but you can begin with fewer if you're working with very young children or children with disabilities who might be overwhelmed by too many letters at once. Then you connect these circles with a brass fastener in the middle and write in the letters. You need to be sure to write the letters so they align with the letters on the other wheels to form the words.

Lorraine: In the article you have a nice series of tables that shows different letter combinations for an easy blending wheel, challenging blending wheel, and a very challenging blending wheel. It's very adaptable. Holly, how do you adapt this idea as readers become more proficient? I believe that you even used it with older students who had reading struggles.

Holly: Absolutely. When we use blending wheels with beginning readers, we generally stick to single consonants in the initial and final positions, and single vowels in the middle. As kids become more proficient we can add consonant blends, consonant digraphs, and so forth in the initial and final position, and vowel teams and more complicated letter–sound correspondences throughout the wheel. I have actually used blending wheels with older students, even a college student with dyslexia. It made a tremendous difference for him. You have to take into account that they do look a little bit juvenile but if your student is okay with that, and mine was, a blending wheel can really work for anyone who's struggling with those basic decoding skills.

Lorraine: Paige to sum it up, what makes the blending wheel such a powerful tool for teaching reading fluency?

Paige: It's a powerful because reading is such a complex tax and there are so many sub-skills that are required to become a proficient reader. It's not enough to have all of these skills; we also have to be fluent or automatic in these skills. In order to read fluently we have to master, in other words, each of those sub-skills to a level of automaticity. *Reading fluency* means reading with accuracy, at an appropriate rate and with prosody, which simply means making your reading sound like spoken language. Blending wheels are a useful tool to practice decoding novel words in print. When children master this skill to a level of automaticity, their reading fluency of connected text may also improve. Blending wheels help students develop decoding skills that ultimately affect their reading fluency.

Lorraine: Holly, what tips would you offer to teachers who might want to try implementing this in their classroom?

Holly: I do have a few tips. First, we have found that when using blending wheels, a lot of the words that are generated are actually nonsense words, or pseudo-words. At some level it seems odd to have kids practice nonsense words; however in our casual observations we've seen that practice with nonsense words actually seems to speed up the development of decoding skills. Nonsense words force children to use their decoding skills rather than relying on familiarity with a “real” word.

They also give children more practice with particular letter patterns, so decoding those patterns really becomes more automatic for them. Nonsense words are also motivating and kind of fun to read. One tip would be, don't shy away from nonsense words. Also make sure that kids understand the different between decoding a real word and decoding a nonsense word. After we have decoded the word *bim*, for example, we'll say, "Is that a real word?" The kids will answer, "No," just to be clear.

It's also helpful for every child to have his or her own wheel, but you could have kids work in pairs, using one wheel per pair, having set some wheels with the same letters in the same location makes small group work possible. I've had parent volunteers make sets of blending wheels for an entire classroom. Having enough so that children can take them home is particularly helpful.

Lorraine: Those are wonderful tips. I can see people taking notes and saying, "I'm going to do this tomorrow." Thank you both so much for talking with me today. I really enjoyed our discussion.

Holly: It was a pleasure.

Paige: I enjoyed it as well. Thank you so much for having us.

Lorraine: Holly and Paige's article, "Blending Wheels: Tools for Decoding Practice," is published in volume 48 of *TEACHING Exceptional Children*. *TEACHING Exceptional Children* is a publication of the Council For Exceptional Children. To learn more about CEC, visit cec.sped.org.