What does research say about the Heart Word Method?

- with Dr. Danielle Colenbrander and Anna Lithgow

Reach All Readers Podcast #255

Anna Geiger: Welcome Dr. Colenbrander and Anna. Thanks for joining me.

Dr. Danielle Colenbrander: Thank you for having us.

Anna Lithgow: Thanks for having us.

Anna Geiger: I'm very excited to talk to you about what you've learned about the Heart Word Method and MPC, but before we do that, could you introduce yourselves and tell us about your history in education and what you're doing now?

Dr. Danielle Colenbrander: Sure. So, my name's Danielle Colenbrander. I'm a senior lecturer in the Australian Centre for the Advancement of Literacy, and I'm really interested in how children learn to read and spell, why some ways of teaching reading and spelling work better than others, and how to apply the things we learn from research in complex practical situations.

So I actually trained initially as a speech-language therapist, but I've worked in schools and with educators from the very beginning of my research career. My job at the moment has three parts. I do research, I teach undergraduate and postgraduate teacher education students about reading development and how to teach reading, and I work with educators to do professional learning.

I'm very lucky. I get to have a beautiful feedback loop between my research and what happens in schools and in classrooms, and I learn so much from my work with educators, and that feeds right back into my research.

Anna Geiger: Wonderful. How about you, Anna?

Anna Lithgow: My name's Anna Lithgow. I recently submitted my PhD thesis. I've studied at the University of Bristol in England and at Macquarie University in Australia. My supervisors have been Dr. Polly Barr, Professor Saskia Kohnen, and Danielle, who's here with me today. My research has focused on instructional strategies to help people read and spell irregular words with irregular spellings.

I have a little bit of teaching experience. I've taught at both universities, and I've worked as a teaching assistant in the UK with young children, and I was an ESL teacher in Vietnam.

Anna Geiger: Wow, interesting. I love that both of you are interested in translating this for teachers because I think so much of the time when teachers see the research, it

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doesn't really seem to make a lot of sense or it's very broad, right? We don't get a lot of really specific ways to apply it every day.

I think this study has gotten a lot of attention from some people on social media, which is wonderful because it's something that we can apply in the classroom. Although the tendency is often to make broad generalizations or conclusions from single studies, so we can talk about caution too.

First maybe we can talk about how you define irregular high frequency words and why students need skills beyond decoding to read those.

Dr. Danielle Colenbrander: Sure. So in English, words fall along a spectrum of regularity from words like "we," where one spelling or grapheme does not represent its most frequent sound or phoneme, to words like "aisle," where really only the grapheme, the spelling L, is representing its most frequent pronunciation, and everything else is not.

So in reality, there's not a hard and fast boundary between those words that are regular and those that are irregular. It's a difference of degree of regularity rather than being a difference in type of word.

And also the degree of regularity depends on what the reader knows. So for very young children who don't know very many grapheme-phoneme correspondences or letter-sound relationships, a whole lot of words are irregular because they don't have the tools to kind of decode them or sound them out. But for a skilled reader, many more words would be regular.

So we have this continuum, but for instruction, we often have to make a decision. Are these types of words ones that we're going to teach in a specific way? And for research as well, how are we going to treat these different words?

Because we tend to think about beginning readers, our definition of irregularity is that a word is irregular if one or more of its graphemes or spellings is not pronounced according to its most frequent phonemes.

So in reality, there's not a difference in kind, it's a difference of degree. But in practice, we do make that distinction.

Anna Geiger: It's interesting how this often leads to a lot of debate, where people say a certain word isn't really irregular because don't you know the rule that…? And then I think that can cause conflict among teachers and feeling like, "Well, just because I didn't know that, then I'm less than someone who has the inside scoop and all the reasons."

Do you have any thoughts about that idea that no word is truly irregular, and is that a useful concept for teachers?

Dr. Danielle Colenbrander: There are definitely words in English that are really

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irregular from the perspective of letter-sound relationships.

Now, if you know a little bit more, say if you know about morphology or you know about some kind of orthotactic rules, like for example, in English words, we don't end them just with a V, we end in V-E.

If you know some of those, yes, you can explain more spellings, but then the question is how much time should we spend on learning these rules? And is that more useful than learning a smaller set of rules and then just practicing them a lot? And also having this ability to go from something that doesn't match all the rules to the correct pronunciation of the word, which is what we would call set for variability or mispronunciation correction that we'll be talking about a bit today.

So I do think that there are irregular words by our definition. I also think that there are some words that have such unusual or almost random spellings that, okay, you could maybe explain in great detail how this spelling originated, but that doesn't help a child to actually read or spell that word, and it doesn't help them with any other words.

So yes, there are lots of ways you can explain the spellings of different words, but there's also a limit to which that's useful from a practical perspective, I would say.

Anna Geiger: Yeah, which is open for disagreement, right? There are lots of opinions about that.

So did you have anything to share about why we need skills beyond decoding to read what we would call irregular words?

Dr. Danielle Colenbrander: Yes, for sure. So let's take a couple of examples. So if we take a word like good, if you decode that and you use the most frequent pronunciation for that O-O grapheme, then you might get something like “good.” That's pretty close, but it's not quite right. So because it's pretty close to the word that you know really well in your spoken language, “good,” it's not that hard for you to go, “Oh, actually, that's probably ‘good.’”

So you've used your decoding, and you've used your spoken vocabulary knowledge, and you might also have used your ability to adjust phonemes. That’s your phonological knowledge as well, from spoken language, to get to that pronunciation.

Another example might be a word like “shoulder,” where you decode it, and you get sh-ou-lder, “shoulder.” And then again, if you have the word “shoulder” in your spoken vocabulary, so you can do a little bit of an adjustment and go “shoulder.”

So you're not just using your decoding, you're also using your spoken vocabulary knowledge. You may also go from your decoding. You might see “shoulder,” and you might not be sure what it is, and then you might read the rest of the sentence and be like, “Oh, it's probably ‘shoulder.’” Because the sentence says, “He bumped my shoulder,” for example.

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So there is other information that you can use to help you go from the decoded form to the correct spoken form of the word.

Anna Geiger: I like how you picked a word like "shoulder" because it's probably not a word we'd call a high frequency word, but it is a word that kids are going to encounter. What we're going to talk about today is true for many, many words, not just what teachers might call a sight word list or something like that.

Dr. Danielle Colenbrander: Yes, yes.

Anna Geiger: So let's talk about SfV. In your article, I think the S was capital, the F was lowercase, and the V was capital.

Dr. Danielle Colenbrander: Yeah.

Anna Geiger: So talk to us about that.

Dr. Danielle Colenbrander: Okay, so we've got a bit of a terminology confusion here. So there's set for variability, and there's mispronunciation correction. And unfortunately for everybody, even researchers don't agree on the definitions of those terms. Sometimes they're used to mean the same thing, sometimes they're used to mean different things, and this makes it really, really hard for educators who are trying to understand the research. Are they the same thing? Are they a different thing?

So what I'm going to do today, I'm not going to go into massive detail about all the discussions that Anna and I and her other supervisors had, and I'm just going to sidestep it, and I'm going to tell you what we're going to talk about today, which is mispronunciation correction.

When we talk about mispronunciation correction, we're using it as an umbrella term to cover a process that goes from decoding or sounding out a word, to producing a regularized form or a spelling pronunciation like "shall-der," and then accessing the correct spoken form of the word.

There are a few ways that you can do that. I've already talked about one way, which is that you access your spoken vocabulary, and you go, "Oh, I think that's the word I know, which is actually 'shoulder.' So I think that these letters, S-H-O-U-L-D-E-R, I think those actually represent 'shoulder.'" Then you're also kind of learning that spelling pronunciation, "shall-der," which might help you to remember the spelling of that word. So one way you get there is using your spoken vocabulary.

Other ways that you might get there that researchers have put forward are that you may just play around with the pronunciation of the word. You may do a phonological adjustment. So you might go "shall-der," "sh-shoul-shoulder," "shoulder." "Oh, it's 'shoulder!'"

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And another thing you might do is you might try a different pronunciation for the grapheme. So you've got "shoulder," and you read sh-ow-ld-er. "That's not a word I know. What's a different pronunciation for that O-U? Could it be /ō/? Oh, 'shoulder,'" and get there that way.

So there are a few different things that you could do, and you might do all of them at different times, depending on the word. But either way, what you're doing is you're using your spoken vocabulary knowledge and your phonological knowledge and your grapheme-phoneme correspondence knowledge to get from the decoded form of the word to the spoken form of the word.

Anna Geiger: Have there been studies that have looked at the use of the concept of set for variability or MPC in other languages? Because I know with a language like Spanish, it would seem like you wouldn't need to do this, would you? Because it's such a transparent language.

Dr. Danielle Colenbrander: Yes. So there've been studies in German and Dutch that have looked at this. They've looked at them sometimes with English loan words, so they've kind of introduced a bit more of that irregularity. I've never seen one in Spanish. Anna, have you ever come across one?

Anna Lithgow: I haven't, but sometimes, like with Elbro and colleagues, when they talk about the set for variability skill, it's important even for transparent orthographies. When you're sounding a word out like "hat," h-a-t doesn't really sound like "hat." So you're still using your knowledge to get from that decoded form to the actual spoken pronunciation.

Dr. Danielle Colenbrander: Yes. So they do actually say this is something that you do with words all along the spectrum of regularity, I should say. But it may be particularly important for those words when you sound them out and the decoded form is further away.

Anna Lithgow: Yeah. Then it becomes a bit more of a sort of problem-solving process when there's that big discrepancy.

Anna Geiger: Interesting. So a lot of teachers listening are very familiar with the Heart Word Method because that's become pretty popular in the last five or six years, and a lot of teachers are using it. How is MPC different from the Heart Word Method?

Anna Lithgow: So both methods draw upon the same kind of underlying principle, which is orthographic mapping. That's the cognitive process of forming sort of mental links between the letters in a word and the sounds that they represent. That's a really powerful way of learning words and storing them in long-term memory.

Both methods kind of draw on that principle but kind of operationalize it in different ways. When you're sounding a word out into a spelling pronunciation, you are sort of drawing attention to each of the letter-sound correspondences, but for that irregular

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element, you're regularizing it.

So for a word like “listen,” for instance, you might go L-I-S-T-EN, “lisTen.” And so that T is sort of temporarily regularized with its most frequent grapheme pronunciation.

Whereas with the Heart Word Method, it doesn't regularize the irregular bit. It explicitly highlights it and teaches its pronunciation in the context of that word.

For a word like “pint,” for instance, you would get children to identify which parts of the word are regular and they already know using their existing phonics knowledge. So that would be the P, the N, and the T. Then the instructor highlights the irregular grapheme-phoneme correspondence, like in a different color or by putting a heart underneath it, and then they teach them the correspondence in the context of that word.

So in “pint,” you'd say something like, "This letter usually makes an /ĭ/ sound, but in ‘pint’ it makes an /ī/sound."

They both draw on the same sort of theoretical foundation, and even though there's not much evidence out there empirically testing the Heart Word Method, it does draw upon that really solid theoretical foundation.

It also draws upon cognitive load theory. So rather than getting children to learn a whole new unfamiliar word, we're just getting them to learn that one irregular element. And by getting them to map the parts of the word that they already know, those regular letters, you're reinforcing their existing knowledge at the same time.

Anna Geiger: Yeah. We often talk about research-based versus evidence-based, so maybe we might call that more of a research-based method than evidence-based.

Anna Lithgow: I guess you could call it sort of theoretically informed. There is now a small amount of evidence for it. However, I did see lots of mentions of it online saying that it was sort of scientifically backed and all the rest of it, which might be a slightly misleading way to talk about it.

But yeah, it does have a strong theoretical foundation, and yeah, there wasn't evidence for it at the time, but that doesn't mean that it's necessarily a bad idea.

Anna Geiger: I like the theoretically based, what you just said. I'm going to use that now. I think that makes a lot of sense, and people can understand what that means, that it makes sense in theory, and so it's worth trying, right? But we do want to look for evidence, too.

Anna Lithgow: Yes.

Anna Geiger: Before you get into your study itself, can you summarize the research on MPC before you began?

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Dr. Danielle Colenbrander: Sure. I'll take this one. So there've been a few studies looking at MPC as an instructional approach, and some of them call themselves set for variability, and some of them call themselves MPC. Again, I'm going to lump them all together for our purposes today because they all emphasize one or more of the ways of going from the decoded form to the correct pronunciation of the word.

One of the first studies was by Zipke in 2016, and in this study, there were grade one and two students who were taught some mispronunciation correction methods that they applied during text reading. That was compared to a control group who just practiced reading aloud without extra prompting.

Zipke would prompt the students in the mispronunciation correction method, if they made an error, to get them to try to say the decoded forms or spelling pronunciations in a different way, or she would get them to try different sounds for particular letters. She found that students after this training made more attempts to try and correct their errors, but they weren't actually getting the words right more often. So they had learned a strategy, but they still couldn't get to the correct pronunciation of the word.

One potential reason for that might have been the fact that the students she was working with hadn't had systematic phonics instruction.

Anna Geiger: Well, that would make sense.

Dr. Danielle Colenbrander: Yeah, so they just didn't have the tools to quite get to the correct pronunciation of the word.

That was interesting because it was prompting in text reading, where most of the other studies were about teaching words.

In 2017, Dyson and colleagues ran a study with five to seven year old children in the UK, so years one to two, and this was kind of a longer study. It was over about four weeks.

They had a mispronunciation correction condition and a business as usual control, where they just got whatever they normally got in the classroom. Their mispronunciation correction condition emphasized thinking of words that sounded like the decoded form and then checking that it made sense in context. The context there is very important. It wasn't the first port of call; it was a check after you decode. It's a very different thing.

They did other things in the mispronunciation correction condition. They also discussed word meanings. They wrote the words. They completed visual matching and rhyming tasks. It's actually a multi-component thing. It wasn't just mispronunciation correction.

What they found was that children in that mispronunciation correction condition improved their ability to read trained and matched untrained words of similar

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difficulty, regular and irregular words. But they also tested them on a standardized task of reading, and they didn't improve on that task. So there was a little bit of transfer, but not wide transfer.

Then in 2018, Savage and colleagues, they had a longer study, again a ten week long study, with at-risk readers in Canada in grade one. They had two approaches that were both multi-component. They both had lots of different elements.

One was called direct mapping set for variability, and it had phonics and a close match of taught grapheme-phoneme correspondences to the books that the children were reading. It also involved set for variability learning, with set for variability strategies that emphasized trying different vowel pronunciations or checking whether the new pronunciation was a word that they knew.

This was compared to another program where children were taught a sort of more traditional phonics plus sight words approach, but they also did shared book reading without that close match between the graphemes and phonemes that were taught and the texts that were read. So there wasn't just that one difference between the conditions. There was more than one difference.

They didn't actually measure irregular words specifically, but the children in the direct mapping set for variability condition did make greater improvements in word reading. So the condition that had set for variability or mispronunciation correction in it seemed to be slightly more effective, but there were other things going on.

And so that was a big question that we were really interested in back in 2022. We wanted to know, was it the mispronunciation correction content that was really driving the gains or was it something else? We also wanted to know how does mispronunciation correction compare to other methods of teaching irregular words that we had seen in practice and in the research?

So we ran a study comparing a brief method of teaching mispronunciation correction in isolation to two other methods of teaching irregular words.

One was called Look and Say, which is very basic. Just look at the word, say the word, and repeat it. And another one, Look and Spell, which was look at the word, say the word, write it down, and get a bit of feedback from the teacher. Both are really basic.

We compared those to mispronunciation correction, and we did that in a really simple way. We did this with kindergarten children in Australia, so they didn't know a lot of grapheme-phoneme correspondences yet. We modeled the decoding process for them, and then we gave them some pictures to help them get to the correct pronunciation of the word.

The example that I always give is the word “young.” We'd show it to them, we'd say, "Y-ow-ng, yowng. You sound it out with me?" They'd sound it out with me. "Does ‘yowng” sound like a word you know?" And then hopefully they say no. "So yowng's not a real word, but does it sound a bit like a word that you do know?"

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Then we'd show the pictures, and then we'd say, "Yes, the word is 'young.' Young. Can you say it? Say it again." And that was it. So again really simple, but it goes through the process of producing a decoded form and then using that to access the spoken form.

We tried to boil it down to its essentials for the purposes of this study. What we found was that that mispronunciation correction condition and the Look and Spell condition were both more effective than the Look and Say condition. But we didn't see any differences between the mispronunciation correction condition and the Look and Spell condition, interestingly enough. They were both equally effective.

So what we got from that is that it's really important that when children are learning an irregular word, that they are processing all the letters in the word in the correct order. Whether that's via decoding or whether that's via spelling, they've got to process all the letters in the word in the correct order.

That's more powerful than just saying it and not doing that below the level of the word processing.

Anna Geiger: Yeah.

Dr. Danielle Colenbrander: Since then, there have been other studies looking at mispronunciation correction, mostly in the context of multi-component interventions like the direct mapping set for variability approach, but the findings have been quite mixed.

Until Anna's work, there haven't really been any new studies comparing mispronunciation correction to another approach.

Anna Geiger: And to your knowledge, is this the first study that's incorporated the Heart Word Method at all?

Dr. Danielle Colenbrander: Yes.

Anna Lithgow: Yeah, so we found lots of mention of that online on kind of teaching resources, blogs, and things like that. But there was no actual research looking into it, which we found really interesting. We were really keen to compare it to MPC and see if there was any difference in effectiveness.

Anna Geiger: With that, what were your research questions?

Anna Lithgow: We wanted to compare Heart Words to MPC. We wanted to look at both outcomes for word reading. Are children able to read the words that they've been taught by these methods? Also spelling as well, because previous MPC research hadn't really looked at spelling outcomes directly, seeing if children can spell the words from memory that they've been taught. That was our sort of comparison of interest.

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But we also compared both methods to a control condition, which was Look and Say again. Like Danielle mentioned, it was just teaching them the pairings between the whole word spelling and its spoken pronunciation and not breaking down any of the letters or sounds.

Anna Geiger: So how did you carry out your study?

Anna Lithgow: We had 60 children from four primary schools in England. They were in year one, which is about equivalent to first grade, I think, in the US. The teachers sorted them into mixed ability groups of up to six children, and then we randomly assigned these groups to either Heart Word training or MPC training.

In the first week of the study, all the children did our active control method. This was a Look and Say training where they were taught 14 irregular words, and the first session was in school with me. Then the following three sessions they did at home. This was designed to reflect a common practice of reading homework, where you learn words in school and then practice them at home again.

All children did that in the first week, and then the next week they did either Heart Word or MPC training, and they learned 14 new words. All of these sessions were in school with me, and we tested children's ability to read and spell the active control and the experimental words before and after we taught them.

Anna Geiger: All the students received access to one of the trained methods, so you're basically saying how well did you know it after you just had Look and Say, and then did you learn it better when you had this other method?

Anna Lithgow: Yeah, so it was a really nice design because it allowed us to compare children's performance with themselves. That was quite a nice way to control that comparison between the Look and Say and either method. It also meant that no child was disadvantaged by having the method that we thought was going to be less effective.

Anna Geiger: Which is always an interesting conundrum when you're trying to do education research, right?

Anna Lithgow: Exactly, yeah.

Anna Geiger: What did you learn? What were the results?

Anna Lithgow: In both of our experimental methods, Heart Words and MPC training, children learned how to read and spell more of the words after that training than they did after the Look and Say, the control training. That difference between those methods was statistically significant, so both experimental forms of training were much better than that Look and Say method.

That really aligns with previous research like Danielle's, as well as our theoretical

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understanding of how we learn to read and spell words. Breaking down the letters and sounds and analyzing the sort of internal structure is really, really important for supporting word learning.

But when we looked at the comparison that we were really interested in, comparing the Heart Words to the MPC method, there was no difference between them at all for either reading or spelling outcomes. They were equally effective, which was a really, really interesting finding, but it kind of makes total sense because, like I've mentioned before, they're both drawing on that principle of mapping the sounds in the words to the letters that represent them, and that's the way you store their spellings in long-term memory.

Even though they sort of approach the irregular part differently, either regularizing it like in MPC or highlighting it and teaching the irregular pronunciation like in the Heart Word Method, both seem to be equally effective, at least for the words that we were looking at.

Anna Geiger: Could you take one of the words that you taught and then walk us through what the teacher talk sounded like when you were teaching it with the Heart Word Method or the MPC way?

Anna Lithgow: Yeah. I'm trying to remember one of the words.

Anna Geiger: Sorry, it's been a while, hasn't it? Or you could do another word if you wanted, but...

Dr. Danielle Colenbrander: I think “touch” was one of the words that you...

Anna Lithgow: Yes, “touch” was one of the words. For the Heart Word Method, I would have the word “touch” on the screen. I did my training on a laptop. I had my laptop screen, and I had the word “touch” written, and I went through the letters one by one.

All of the regular graphemes in the word, so the T and the C-H, they were in black, and I'd introduce them one at a time, and I'd say, "Okay, what sound does this letter make?" The children would say, "/t/." Then I'd introduce the other regular part of the word, which was the C-H grapheme, and I'd say, "Okay, what sound does this letter make?" "/ch/."

Then I would introduce the irregular grapheme, which in the word touch is the O-U, and it was highlighted red. And I said, "Okay, so these letters usually make an /ow/ sound, but in this word, they make an /ŭ/ sound."

Then we went through all the letter sound correspondences again, so the /t/ /ŭ/ /ch/, and blended them together, “touch.”

Anna Geiger: Okay. And then can you show us how it sounded with MPC?

Anna Lithgow: Yeah. In MPC, I would decode it into that spelling pronunciation. So

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t-ow-ch, towch. Then I would say, "Okay, this sounds like a word we know, but I don't think it's quite right." Then I read it in a sentence, so, "I must not 'towch' the oven when it's hot." And then I said, "Okay, what's the word? How does this word really sound?" "Touch." Yeah. And they told me the correct pronunciation.

Anna Geiger: One thing I think you said in the study was that the MPC method was faster, and I think you just mean that the process of teaching it is faster, right?

Anna Lithgow: Yeah. So at least with the small groups that I was training, on average, the Heart Word sessions were about a minute longer. In the classroom, I'm not really sure, when you're managing a very different dynamic, who's to say.

Dr. Danielle Colenbrander: I was just going to say that there's potential there that it might be quicker, and then if they're both equally effective and it is quicker, then you might choose the one that's quicker. But I would say a little bit more research is still needed on that before we can draw any strong conclusions about that.

Anna Lithgow: Yeah, definitely. In our study it was quicker, but again, we were just training small groups of six children. And I think we only had about sort of… I can't remember how many groups we had in total, but it might be a different dynamic in the classroom, but we just need more research.

Anna Geiger: I really appreciate the part of your article where you said that it might be helpful to have a combination, because even if we would say, well, the MPC method might be superior because it's quicker, some words don't work for that, and at least if we're not talking in context, it might be hard.

For example, the word "come," and I think that was the word you used. You called it potentiaphone, is that right? And what is that?

Dr. Danielle Colenbrander: Yeah, it's a potentiophone. That's a word, and there actually aren't that many of them in English, but they do exist, where if you sound it out, it forms the pronunciation of a completely different word. With "come," if you sound that out, you get comb, which is another real word, and that's really confusing.

So if you try and do mispronunciation correction with that word, you're just going to end up with confusion, so that kind of word would not work so well for mispronunciation correction.

There are other words that may not work so well for mispronunciation correction, for example, take the word "queue." What's the spelling pronunciation for that? Is it qu-e-u-e? Like, we don't really know. It doesn't form a reasonable spelling pronunciation, so that's a bit of a strange one for mispronunciation correction.

But then there are other words that will not work as well with the Heart Word Method. If you take the word "I," which part of that is regular? No part. So you can't really do Heart Words with a word like that. That one actually isn't even going to work so well with mispronunciation correction because we get something like /ĭ/. So that's when

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you might be looking at a Look and Spell type approach just for that small set of words that are really quite irregular and really frequent.

Sometimes there is a case for Look and Spell or even, dare I say, with very beginning readers, Look and Say. If you have words like “do” and “to,” for example, they've got something in common. You'd teach them together, teach that pattern together. But you might, in the beginning, when they really only know the /d/ and the /t/, you might be then doing a little bit of Look and Say just to get them on that path, and then when they're a bit further down the road, then you introduce other approaches.

It's really about having different tools for different words, and we haven't been able yet to test that in different studies. But this is based on our experience of trying to teach these different things and thinking about it a lot, that it is likely that there are some words that are going to work better for Heart Words.

For Heart Words, we think this would be really useful for monosyllabic or disyllabic irregular words with one irregular grapheme-phoneme correspondence, like “put” or “blue,” for example. And then when words start to get a bit longer and they have useful spelling pronunciations that help you remember the spelling, like “lisTen” or “mountAln” or “Wed-nes-day,” those are beautiful ones for mispronunciation correction.

Then when you have those really unusual spellings and very frequent words like “I,” then you might be looking at Look and Spell or, as I said, maybe even, dare I say, Look and Say for the very beginning readers.

Anna Geiger: What would you say teachers can take away from this? Because I know that we're going to hear things like, “The Heart Word Method is proven by research.” What is the proper way to phrase what you learned and how we can apply that to what we're doing in the classroom?

Dr. Danielle Colenbrander: We have some evidence that Heart Words works better than Look and Say, and we have some evidence that it works as well as mispronunciation correction.

What we do not have is evidence that it's superior to mispronunciation correction or even Look and Spell. We haven't tested it against Look and Spell. So it works, it works reasonably well. It works as well as other things. So there is some evidence to support Heart Words as part of a repertoire of approaches, and that all of them have some evidence behind them.

That's how I would say it, and I think it comes back to this idea of theory-based versus evidence-based and also what it means to be evidence-based. If all we have is theory, and the theory is telling us this is consistent with a reasonable theory of how children learn to read, then yep, that's worth trying.

But if we have something else that has a study where someone's actually tried to do it and it's worked better than something else, that's stronger. That's better than being

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theory-based. That is the beginnings of being evidence-based.

Now, if we have lots of studies by different people in different countries in different situations, and it always works, then it's really evidence-based.

Anna Geiger: So is there any kind of agreement about how many studies it takes before we can say that something is evidence-based?

Dr. Danielle Colenbrander: Not really, unfortunately. But I think that we're starting to feel more confident about mispronunciation correction because it's been done in a few different studies in slightly different ways in different countries. We're gathering a little bit more evidence. What might happen when there are enough evidence is somebody might do a meta-analysis, which is a study of studies, and what that does is it helps us pull all the signal out of the noise of those studies. We don't have that yet.

Anna Geiger: We need a lot more of your kind of studies to be done before we can do that, but that would be nice.

Dr. Danielle Colenbrander: Yes. I'd love to do that at some stage, but yeah, we don't have that yet.

What we have now is some evidence that mispronunciation correction works, evidence from one study that Heart Words can work, and we actually have evidence from a few studies that Look and Spell or Look, Say, Cover, Write, Check works, because that's been something that people have studied for longer.

What we have less evidence on is when it works with which words and for whom. Which points in the process of teaching children to read and which words?

Anna Lithgow: I think it's also important to be mindful that the study that we did was in England, so the children had had a really strong foundation of systematic phonics instruction. Their letter-sound knowledge was very, very good, so they were able to identify and map all the letters in the words apart from the tricky one that we had to teach them.

Also for mispronunciation correction, if children don't have the correct spoken form in their vocabulary, it's not really going to be possible for them to correct that decoded form. You need to be mindful of that as well if integrating it into your practice.

Dr. Danielle Colenbrander: Yeah, there's so much about the importance of vocabulary knowledge as well when getting into reading.

Anna Geiger: I know people would ask, "Is MPC useful for children who are learning English?" If you have students in your class that are still learning the English language, is there any usefulness in the MPC method, or do they just need to...

Anna Lithgow: I'm not sure if there's much research out there on teaching children

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who are second language learners.

Dr. Danielle Colenbrander: That's a good question.

Anna Lithgow: That is a very good question. I might worry a little bit that introducing an alternative pronunciation could be confusing for second or additional language learners. But again, I wouldn't like to say for sure.

Dr. Danielle Colenbrander: Yeah, I think for learners of other languages, getting that phonology of a new language can be really hard, and especially at the phoneme level. It may be that for them, what they need is to learn the pronunciation of that spoken word and get that really secure and practice the relationship between that and the spelling of the word.

But this is entirely speculative because, yeah, we don't have research on this, and I wouldn't say that second language learning is my area of expertise.

Anna Geiger: Yeah. Interesting. Well, thank you so much for doing this work and also being willing to talk to me about it. I think people are going to be really interested in this, and I'm excited to see what else comes out about this in the future.

Dr. Danielle Colenbrander: Our pleasure. Thank you for inviting us.

Anna Lithgow: Great to talk to you.

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