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REVOICING

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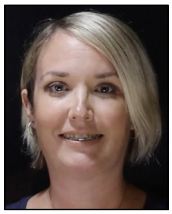
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IN THIS ISSUE

Revoicing

In this edition, we explore the insights of researchers on revoicing, recount our own experiences with revoicing during number talks, and delve into how a literacy teacher educator perceives and utilizes revoicing. Our intention is to encourage reflection on the potential applications of revoicing in mathematics classrooms.

What is revoicing?

Revoicing, put simply, is a talk move that involves a student expressing themselves verbally, and then a teacher or peer echoing, repeating, summarizing, rewording, or elaborating on what was said.

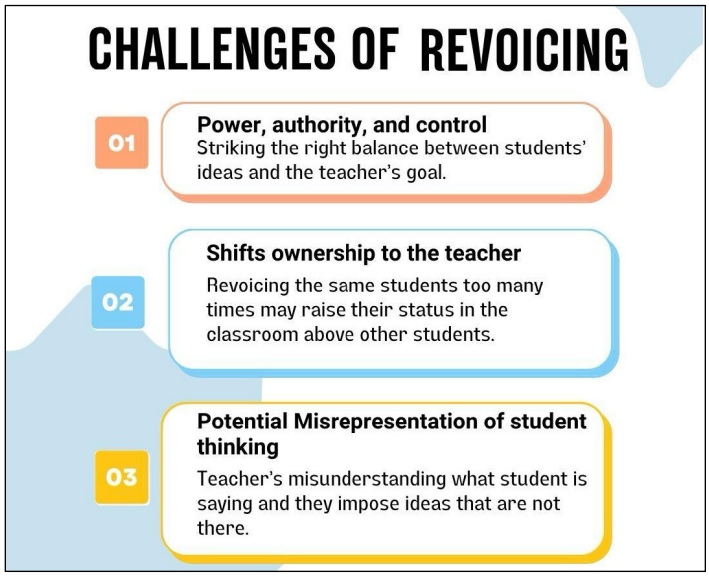
The decision to dedicate an entire issue to revoicing stems from its recognition as a powerful teaching move, recommended for widespread adoption by educators (Herbel-Eisenmann et al., 2009). Despite its advocated effectiveness and potential in research papers (e.g., Matney et al., 2020; Parrish & Dominick, 2016), widespread implementation faces challenges, and there are indications that revoicing is not widely embraced in mathematics classrooms. For instance, while

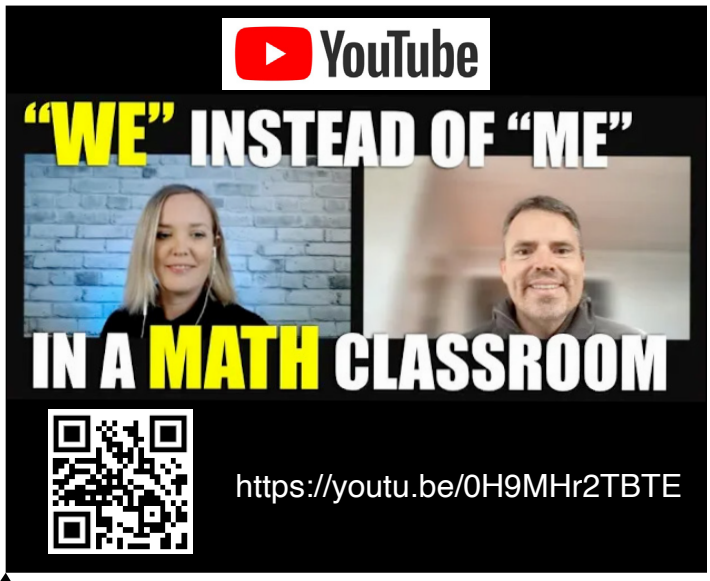
In research on number talks, there were few examples of revoicing, even though it was identified as a high-yield strategy (Matney et al., 2020).

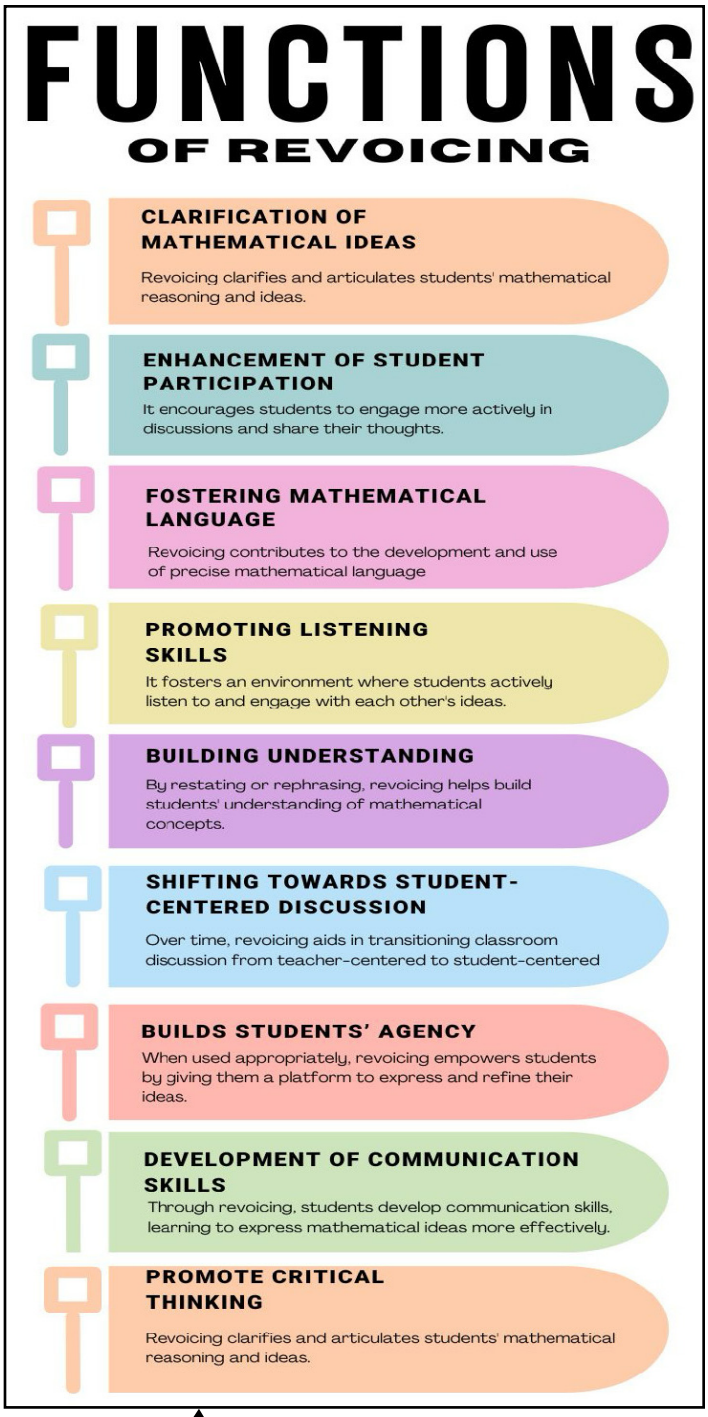
we recognize that we incorporate revoicing in every number talk that we do, a seminal study on number talks by Matney et al. (2020) observed none of the teachers using revoicing. While research supports the conceptualization and advocacy for revoicing, studies on teachers' perceptions of number talks reveal the challenges and complexities associated with its application (Herbel-Eisenmann et al., 2009).

We invite readers to explore their own interpretations and ideas about revoicing in this issue, and to communicate with us, sharing concrete suggestions on how we can enhance revoicing in mathematics classrooms. Our hope is to stimulate ongoing discussions on refining revoicing practices in future *Abacus* issues.

The focus of our lesson insert centres on the mathematical question 67 divided by 5. The questions we address in this issue are: 1) *What is revoicing and why should I revoice?* (Meaning, what are the functions of revoicing?); 2) *How do I revoice?*; 3) *What can I expect my students to say during a lesson on 67/5, and what are some revoicing possibilities within that lesson?* Similar to previous editions of the *Abacus*, this one also features videos! There is an explanatory video on revoicing, as well as another one tailored for classroom use, specifically addressing the question 67/5.







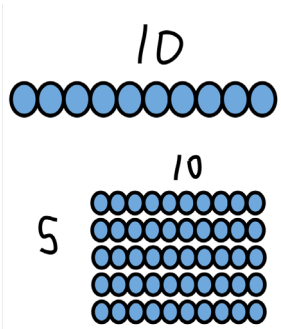
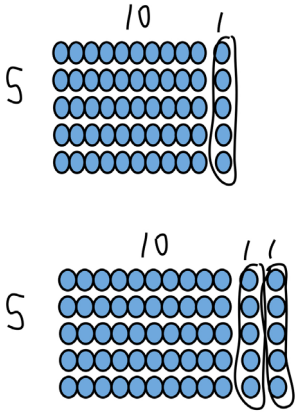
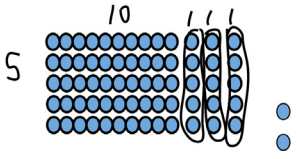
HOW DO I REVOICE IN MY CLASSROOM?

Revoicing students' mathematical ideas

To demonstrate revoicing in a classroom, we share a teaching episode of ours involving two solutions' strategies for dividing 67 by 5 (the same question the lesson in this issue is built on) that unfolded in a Grade 4 classroom.

A classroom episode:

After about a minute of students talking with their elbow partners, the teacher chose Arun to share with the class. As Arun shared, the teacher revoiced the students' strategy and recorded an image on the board to represent it visually.

CLASSROOM EPISODE/TRANSCRIPT	REVOICING	
Revoicing examples are highlighted	**Images recorded on the board during the lesson**	**Function**
Arun: "We both went to 10… and it was 50, then we counted up by 5, so like to 13…." **Teacher:** "So, you did 5 times 10…, and then what did we do after that?" **Arun:** "And then, like, we did, we just counted up by 5." **Teacher:** "Oh, then we counted up by 5's. Okay… I'm gonna just build it here from what you said. So there is 1 group of 10, right? And you did this 5 times, right?" **Arun:** "Yeah… then I added 3 more times onto it." **Teacher:** "Okay, let's see this. I want to be able to see what you did… so this is what you knew, 5 times 10 is 50?"		**Function: Clarification of math idea** In this episode of revoicing, the teacher clarifies that counting up by 10's 5 times is the same as "5 times 10."
Arun: "Yeah, and then I knew 5 times 13 is 65, since you just add 5." **Teacher:** "So I add now… 5 more?" **Arun:** "You add 15 more…." **Teacher:** "Oh, okay hold on, so then I'm gonna add another 5, 'cause you said 5, right?" **Arun:** "Yeah." **Teacher:** "So there's another 5." **Arun:** "So right now it's 11 times 5." **Teacher:** "So then it's 11, so this is the 10 and that's the 5, and this is one more which makes 11." **Arun:** "Then I made it 12 times 5!" **Teacher:** "So 5… so you did 5 times 10 equals 50, then you have another [1 times 5], then you have another 1 times 5, which is 5 more. Then what?" **Arun:** "Then I did 5 times 12." **Teacher:** "5 times 12. So another 5. And that's 60, right? Okay. Then what?"		**Function: Developing communication skills** In this episode of revoicing, the teacher slows the student down to confirm that the teacher and the student are both clear on how the student has arrived at 5 times 12.
Arun: "Then I added 1 more 5, so it was 5 times 13." **Teacher:** "Okay. So then we do one more 5, which is what, what did you say?" **Arun:** "65." **Teacher:** "That is 65." **Arun:** "And then you have 2 remainders." **Teacher:** "Okay, so there's another 5, right? And that's 5, so this is 65, so 5 times 13 equals 65. And then there are 2 remaining. Is that right?" **Arun:** "Yeah."		**Function: Clarification of math idea** In this episode of revoicing, the teacher revoices the idea of the 2 remainders left over after 13 groups of 5 have been put together when trying to get to 67.

KEY:
Blue: Student says
Yellow: Teacher revoicing
Pink: Revoicing with images

LESSON IDEA FOR REVOICING DURING 67 ÷ 5

Links to Ontario Curriculum Expectations:

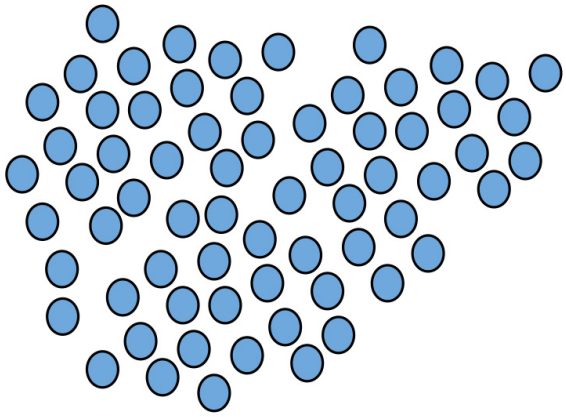
Grade 3	Grade 4	Grade 5
B2.6 represent multiplication of numbers up to 10 × 10 and division up to 100 ÷ 10, using a variety of tools and drawings, including arrays	B2.6 represent and solve problems involving the division of two- or three-digit whole numbers by one-digit whole numbers, expressing any remainder as a fraction when appropriate, using appropriate tools, including arrays	B2.6 represent and solve problems involving the multiplication of two-digit whole numbers by two-digit whole numbers, using the area model and using algorithms, and make connections between the two methods

Teacher Prompt:

“The challenge for today is to divide the counters into 5 equal groups. So, we have 67, and we need to divide them by 5."

Teacher Tip:

Display 67 magnetized counters in a randomized way on the whiteboard.



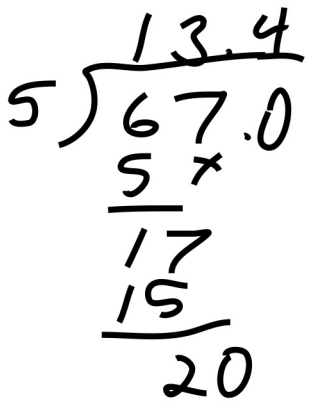
Teacher Tip: Anticipating Images of Division

How many times does 5 fit into 67?

If 67 is split into 5 equal groups, how many are in each group?

Student says:

"I know how to divide… 5 goes into 6 one time, there's one left over, bring down the seven. 5 goes into 17 three times, and there are 2 remaining."

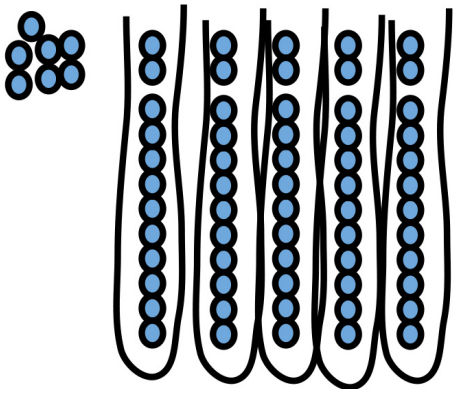


Teacher Prompt:

"Is there a different way to figure this out?"

Student says:

"I know that 5 times 12 equals 60."

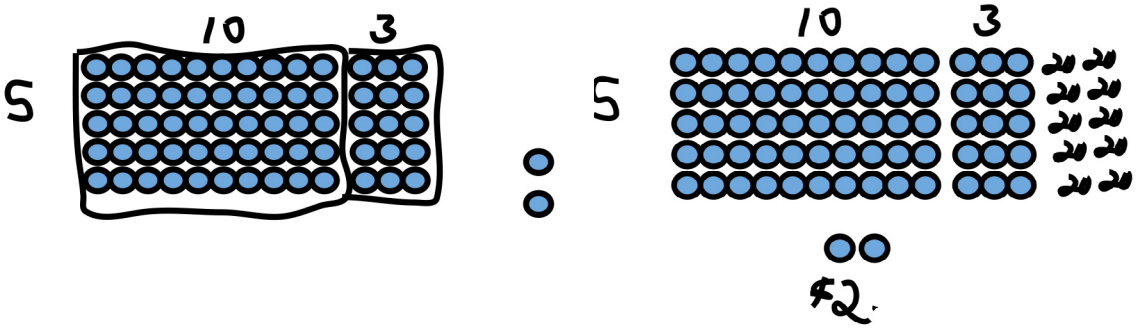


Teacher Tip: Dealing with Remainders

Since there are 2 remainders, ask students to think about money (i.e., two dollars). How can you share $2 among five friends?

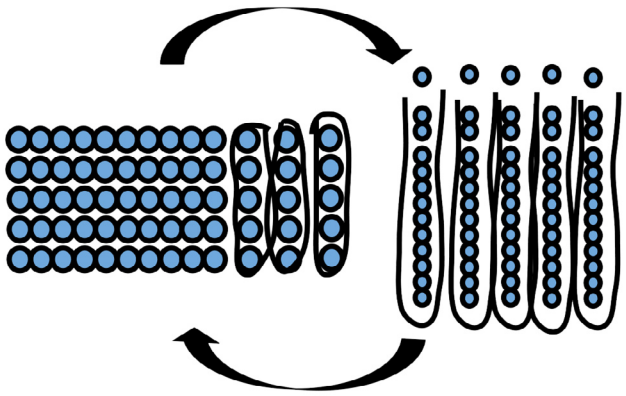
Student says:

"Both went to 10… and it was 50, then we counted up by 5, so like to 13…."



Teacher Prompt: Making Connections

"Can you find all the numbers that are in the left image in the right one? And vice versa?"



USE REVOICING: HERE'S WHY

By Michael Fairbrother

Full disclosure: I was an elementary teacher, who now teaches pre-service teachers about language arts and literacy. And though revoicing and talk moves are more often discussed in relation to teaching math, I wanted to share with you how effective revoicing is for me and why we should be doing it!

Revoicing: A Three-Dimensional Talk Move Making Learning Visible and Building Learning Communities

To me, this title suggests the essence of what good instruction is: thoughtful, personal, and geared to creating classroom learning. And that's what I really like about using revoicing. It is inclusive because to do it effectively, it relies on us to listen to our students in a way that ensures we are valuing their ways of making and expressing meaning. For me, revoicing is a tool in my instructional kit that helps me to establish my classroom as a flourishing learning community. Yes, revoicing is a talk move, but like all effective talk moves, revoicing is dependent on teachers' ability to listen to who their students are and what they are saying. Unique in revoicing is ensuring you begin making students' thinking visible by repeating students' utterances (a seminal article from O'Connors and Michaels (1993) is a great resource for learning more about it). Revoicing builds on the how of student understanding through a series of talk moves, structured for drawing out student perspectives.

Sarah Ferris represents revoicing as a three-dimensional structure of accountable talk in her language arts instruction, nurturing student knowledge and reasoning, and by contributing to a learning community (see Figure 1).

In these ways, I use revoicing to build a classroom community of learners because I strategically structure ways for valuing (and revoicing) my students' knowledge and the ways they make meaning in my classroom. In doing so, I am removed from being the teller to being a listener of my students.

Benefits of Revoicing

- *Academic outcomes:* Promotes deep learning and conceptual understanding because student voices are positioned alongside each other to facilitate diverse ways of understanding (Enyedy et al., 2008)
- *Social outcomes:* Values diverse voices, gives credit to student contributions, and creates engaged and motivated students

Revoicing is an instructional strategy that when designed properly, is positioned to unfold students' current levels of knowledge about a topic, and from this foundation, builds upon the range of student perspectives existing in the classroom. However, there are challenges for teachers as they consider implementing revoicing in the classroom.

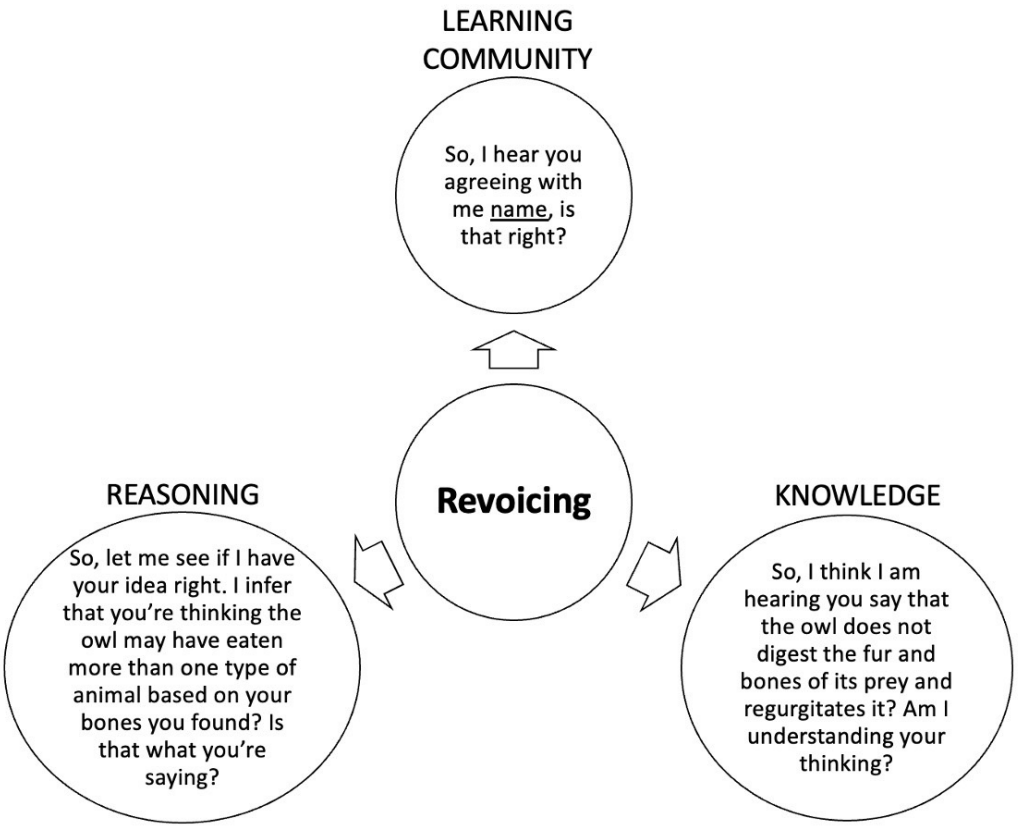


Figure 1: Three dimensions of Revoicing. Reproduced from Ferris (2014).

Challenges of Revoicing

- *Turn Taking:* As a teacher, I often got caught up in finishing lessons and quickly moving on to the next thing. Research shows that in the rush of the day, teachers often resort to choosing students to elicit the answer they want. This excludes and leads to perceptions of being blocked from the classroom community (O'Connors & Michaels, 2019).
- *Wait Time:* Not providing students with sufficient wait time leads to misrepresentation of their ideas (Zhang et al., 2011).
- *Possibility of Bias:* Revoicing builds on students' funds of knowledge, but researchers have found revoicing is unsafe for underrepresented students when teachers are unaware of dismissive attitudes arising in students from more dominant cultures (O'Connors & Michaels, 2019).

Summary

In summary, revoicing is a highly recommended talk move in research, though there are challenges to enacting revoicing as an instructional tool. With time, practice, and commitment to building upon all students' perspectives, the benefits outweigh the challenges. As teachers, we can practise and refine our revoicing in multiple subjects. Math and language arts are two subjects every elementary teacher teaches and were highlighted here.

In fact, "through revoicing, teachers model language use and are also held accountable to the learning community, to knowledge, and to reasoning as they strive to make sense of student ideas" (Ferris, 2014, p. 354). Yes, it takes time to practise and learn to do revoicing with your students. However, by paying attention to how revoicing can look and sound while being aware of the challenges that do exist, you can add revoicing as an essential part of your inclusive teaching toolkit.

While it requires time and effort to master revoicing with students, being mindful of how it looks and sounds, along with acknowledging existing challenges, allows you to integrate revoicing seamlessly into your inclusive teaching toolkit. Moreover, there is immense potential for student learning when educators collectively work to understand how to revoice and teach this skill to students. We eagerly anticipate fostering further discussions on the teaching of revoicing for enhancing mathematics learning.

Conclusion

The research is clear: using revoicing as an instructional strategy promotes deep learning in classrooms. When effectively implemented in literacy, revoicing builds a classroom community by purposefully acknowledging and repeating students' ways of knowing and meaning making. In mathematics, revoicing students' ideas can help *clarify students' mathematical ideas* and *slow things down to provide an image* so students can see what is being revoiced.

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