Kaleidoscope

Educator Voices and Perspectives

Knowles
TEACHER INITIATIVE

Transforming Mathematics & Science Education

In This Issue

Disclaimer

KALEIDOSCOPE

EDUCATOR VOICES AND PERSPECTIVES

Call For Submissions

The *Kaleidoscope* editorial staff accepts submissions on a rolling basis. We publish in a variety of formats, including print, podcast and video.

If you are interested in writing, or already have a piece in mind, contact **kaleidoscope@knowlesteachers.org** at any time for feedback, information, or guidance. Every submission, from idea to fully-developed piece, is assigned a peer advisor to help develop, build, and edit the piece before submission.

On our webpage, **www. knowlesteachers.org/kaleidoscope-about**, you can find other resources to help you develop your ideas, including
- a non-exhaustive list of the genres of stories we publish, including examples of pieces from *Kaleidoscope* and elsewhere;
- the rubric used for the final review of submissions; and
- past issues of *Kaleidoscope* to see what others have written.

We look forward to reading your work!

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From the Editors' Desk:
The Power of the Small-Scale

> **All of our teacher-writers in this issue illuminate some aspect of the power of looking closely at what is right in front of us.**

As we read and reviewed the articles for this issue, we were struck by the resounding theme of small-scale, granular change.

Teachers deeply know the joy of individual breakthroughs with students, and we also intimately know the satisfaction that our relationships with these students brought about that change. We get front-row seats for watching students grow through the days, weeks and years.

So it is understandable that we would want to replicate that success at larger scales. We look for ways to have a bigger impact; we step outside our classroom doors and wade into the work of departments, schools, districts, and even national networks to find ways to do so. In this issue of *Kaleidoscope*, though, we see teachers coming back to the scale of inquiring into individual relationships. We hope the stories collected here show that some of the most meaningful impacts that teachers can make begin with the relationships we have with our colleagues and students.

Growth can come from empowering a colleague like Mr. Alvarez, as Ian Caldwell, Heidi Park and Sarah Spector describe in "Shifting Perspectives of Success." Or developing the self-awareness to know when you've fallen into the common pattern of sharing best practices without revealing the process, as Chris Lipski describes in "Setting Teachers Up for Success: A Reflection on Providing Professional Development."

Or in the necessity of finding community with others, as described by Ayanna Perry and Dwaina Sookhoo in "Beyond Diversity: Reflections on Participation from Two Women of Color."

All of our teacher-writers in this issue illuminate some aspect of the power of this small, relational scale, some aspect of the power of looking closely at what is right in front of us. For Becky, there is a parallel to music making: one of her teachers, as she was learning to play the French horn, told her to not worry about anything but ensuring that each sound she was producing was beautiful. Similarly, the teachers in these pages are teachers working to improve the spaces in which they move, making each relationship, system and experience more humane and, thus, more impactful.

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Kirstin Milks,
a Knowles Senior Fellow, is an editor-in-chief at Kaleidoscope. Reach Kirstin at kirstin.milks@ knowlesteachers.org.

Rebecca Van Tassell,
a Knowles Senior Fellow, is an editor-in-chief at Kaleidoscope. Reach Becky at rebecca.vantassell@ knowlesteachers.org.

Call and Response:
What Keeps You Coming Back?

We asked teachers in the Knowles community to tell us: **"What keeps you coming back to the classroom?"** *Here are their responses.*

The students keep me coming back to the classroom—not always the ones sitting in front of me each day, but students past who are now pursuing exciting challenges with passion and perseverance. The Dreamer who is now a celebrated pediatric nurse, the first-generation college student working toward a doctorate in biostatistics, the English-language learner performing summer research at CERN: they keep me coming back.

Mandi Kraemer, Senior Fellow

Teaching doesn't feel like a job; it's fun! Every day is an adventure filled with learning for my students and me. Having former English-language learner students hang out in my classroom because it's a safe place, getting emails from current and former students sharing something physics-related and seeing students get excited about what they're learning and keep trying when it's tough have all kept me coming back for 20 years. It seems like just yesterday I was starting my career, full of excitement, enthusiasm and hope, believing that I could make a difference in students' lives. I still have that belief, so I keep coming back.

Lisa Sitek, Senior Fellow

I keep coming back to try to make school a place where I'm excited for my future kids to go. I keep coming back to try to make all schools a place where students WANT to spend seven plus hours a day for 13 years of their life—a place where they can explicitly see its purpose.

Madison Park, Senior Fellow

Whenever the going gets tough, this student quote pops into my mind: "I have never before had a teacher who genuinely cared about how I felt. In my 8 years of living in America and going to American school, you have been one of the best teachers I have had. Thank you for being awesome. Your effort motivates me. Thank you!" That's all I need.

Allison Kipping, 2015 Teaching Fellow

After a series of lessons about air pollution in the Salt Lake Basin, I regularly hear students talking about how they hate it when it snows, but at least it clears

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>
> *- Lisa Sitek, Senior Fellow*

out the inversion. They now understand their everyday world a little bit better than they did before!

Jamie Melton, 2016 Teaching Fellow

Last month, one of my students came out as a lesbian. After a particularly rough day, she collapsed in my room, crying, and said, "I'm so glad to know you're here for me, even if my parents aren't." Last year, I had a student commit suicide. When his best friend finally returned to school, he hugged me for a very long time and whispered, "Thank you for being a genuinely caring teacher." These little moments remind me, for a brief second, that the work I do is impactful and powerful. These little moments are always in the back of my mind, and they are what keep me coming back.

Mandi Dean, 2016 Teaching Fellow

What keeps me coming back to the classroom is the ability to develop excellence in the minds and hearts of students!

Cris Chacon, 2017 Teaching Fellow

What keeps me coming back to the classroom is my ability to advocate for and support my students. Today I did some research on future college science and math classes that I'm going to share with a student since he wants to be an aerospace engineer; I plan to encourage him to challenge himself since I believe in him. I helped another student navigate a difficult interaction with a fellow classmate and turned it into a teachable moment—I was faced with this issue myself in the past, and I want her to be better able than I was to handle this situation if it happens in the future. I care about my kids and want to help them learn in a supportive environment where they can develop the skills they'll need to succeed in life. I also want to be a part of making a better world for them. This is what keeps me coming back to work.

Kristin Mongelli, Senior Fellow

Every year, I meet ninth graders who enter my classroom with high math anxiety. Too many young people do not see themselves as mathematically (and academically) capable in my school. I listen to their stories to gauge why learning math has been a struggle, then use their experience as a guide to be a better math teacher for them. I LOVE watching students grow into confident mathematicians, and I LOVE watching them learn how to support one another. No other role in a school positions you to witness this beautiful human transformation. I come back to the classroom because I want to continue watching students, old and new, grow. I come back because I need them to inform my growth as a math teacher.

Liz Smith, Senior Fellow

> ❝
>
> *No other role in a school positions you to witness this beautiful human transformation."*
> *- Liz Smith, Senior Fellow*

What keeps me coming back to the classroom are opportunities to be creative. I love spending time thinking about new ways to introduce/reinforce topics and how to help students see connections between topics. It's exciting to be able to dive into a new course, or work on improving what you have done in the past. It's also fun to connect to more people and resources each year in person and through the internet.

Sujata Ganpule, Senior Fellow

An ongoing feature in *Kaleidoscope*, Call and Response features short responses to a writing prompt. Do you have an idea for a storytelling prompt? Contact us at **kaleidoscope@ knowlesteachers.org**.

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Now on Teacher Voice
After the Story's Out

In this episode of **Teacher Voice: The Podcast,** teachers talk about what happened for them after their writing was published.

Host Brittany Franckowiak joins fellow *Kaleidoscope* staff members Beverly Stuckwisch and Kirstin Milks to explore the aftermath of publishing their thoughts and experiences on teaching and learning.

> *"Making our teacher stories public can be challenging, both in ways that we expect and in ways that we don't. It's an unpredictable process, and sometimes it's frustrating. Sometimes it's rewarding. But it's always urgent."*
>
> *- Brittany Franckowiak*

Listen to the podcast to hear Brittany and Beverly, both Associate Editors, and Kirstin, an Editor-in-Chief, unpack how telling and sharing their stories led to important insights in their professional journeys.

> *"I know that the same has been true of other authors who have written for Kaleidoscope: they've been shocked with some of the ways that their stories have been shared and some things that people have gotten out of it that they haven't thought of themselves."*
>
> *- Beverly Stuckwisch*

To hear more about these teachers' experiences after publishing their work, listen to the podcast on our website.

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Beyond Diversity: Reflections on Participation from Two Women of Color

Dwaina Sookhoo
and Ayanna Perry

Two perspectives and takeaways from Black participants who experienced Beyond Diversity.

Engaging in conversations about race is difficult for many people, irrespective of their race. What makes these kinds of conversations so hard is that the speaker is often unsure of how the listener will interpret what is said or how the listener will respond. This concern about, or fear of, misinterpretation is often heightened when the people in the conversation are racially different. But people working to engage in more conversations about race do not need to remain in places of concern or fear. With support, it is possible to move toward a place of comfort.

One avenue for support to engage in conversations about race is to attend a Beyond Diversity seminar, a "two-day seminar designed to help leaders, educators, students, parents, administrators and community participants understand the impact of race on student learning and investigate the role that racism plays in institutionalizing academic achievement disparities" (Pacific Education Group, 2018). This article describes the range of emotions and subsequent learnings of two Black women who engaged in the Beyond Diversity seminar. The questions that preface each section are included to organize the themes we found in our reflections and share our similar or different perspectives.

Let's start with why we both choose to go to a seminar to learn how to talk about race. As women of color,

don't we already know how to do that?

Dwaina: I decided to attend this seminar twice. The first time was with people from the Knowles Teacher Initiative, which I will refer to as my Knowles training, and the second time was at the request of my school principal, which I will refer to as my district training. I always want to talk about race and to get better at having conversations about race with both white people and people of color.

Ayanna: I've been working on learning more about issues of equity as they relate to education for more than a decade. When I learned about this seminar from others at Knowles, I thought it would be a great opportunity.

Dwaina, can you say more about why you chose to attend with members from your different learning communities?

Dwaina: In 2018, I decided to attend the Beyond Diversity seminar that was held right before the Knowles Teacher Initiative Summer Meeting. The opportunity to talk about race with members of a community I've grown to love and trust was an easy decision to make. The previous Summer Meeting had many formal and informal race talks surrounding the Book Committee's decision for us all to read *Mathematical Mindsets* (Boaler, 2016). During the book panel discussion, many Knowles Fellows felt the topic of race was purposefully skirted. In my teaching career, I have mostly operated under the belief that if I want to feel represented in any space or conversation, I have to represent myself. If Knowles Fellows within their own cohorts and affinity groups want to start conversations around race, I need

to attend Beyond Diversity in order to be represented in the conversation and in the work they want to do moving forward.

My reason for deciding to attend with my school-based colleagues was different. I switched schools for the 2018–2019 school year for many reasons. One was that I wanted to teach in a school where I felt represented in the staff and in the student population. My new principal nominated me to attend the Beyond Diversity training in the fall of 2018 due in part to the fact that I had already attended over the summer. When I was given the opportunity to attend the same training with members of my school that I had been developing varying levels of trust and comfort with, I was able to gain insight into the nature of approaching conversations about race with colleagues. However, I was hesitant to re-enter such an emotional experience, especially in front of a white staff member, an Asian staff member and my white principal I had just met a few months prior. But my self-belief in representation kept me from turning down the opportunity. I wanted Black educators in my building, and in my district, to continue to have their voice heard in the conversation. Not attending would feel like a professional dismissal of the importance of courageous conversations.

Ayanna, why did you choose to attend this conference alone, rather than with people from your learning community at Knowles?

Ayanna: My initial wish was to attend with some of my Knowles colleagues, but that fell through due to scheduling. I was hesitant to attend with some of the Knowles teachers I support because, despite having positional power as a result of my employment, there are places and spaces in my work where I see and directly experience the effects of white privilege.

I chose, rightly or wrongly, to not muddy my current relationships with teachers I appreciate, respect, and have mentored with discussions about race that I wasn't sure I was ready to have with them. It's not that I didn't want to work up to those conversations, but I didn't want to be thrown into those conversations until I was ready to have them. For these reasons, I chose to attend the Beyond Diversity seminar held at the National Summit for Courageous Conversations, instead of attending the seminar held at the Knowles Summer Meeting.

Each of us decided to attend this seminar to talk about race. What happened? How did we experience it? What resonated with us most during the seminar?

Dwaina: I will try to contrast my experiences in the two spaces. In my Knowles training session, there were mostly white people in attendance, including two white Program Officers for Teacher Development

from the Knowles Teacher Initiative. In the fall district training, I was struck by how much more racially diverse the attendees were, with the room composed of approximately 40% Black, 50% White and 10% Latinx or Asian participants. Teachers, assistant principals, and principals from across my district were in attendance and seated at assigned tables by school.

Based on my experience in the mostly white space and the more racially diverse space, I have come to understand that either space can feel isolating or empowering. In the Knowles training, reading my reflection of day one to the room gave me the opportunity to open up in a way that felt productive in a mostly white space. I had everyone's undivided attention to share my discomfort and emotional response to the activities in which we had engaged. On the other hand, I had a less empowering experience with my affinity group during the district training. When asked to share their day one reflections, the first 13 people to do so were African-American, 10 of whom were women. Only when our presenter intentionally opened up the floor to different opinions did a few white educators feel willing to share.

Sharing the training at Knowles with a room full of educators that I know personally and professionally created some comfort but also some discomfort. I had never discussed race in depth with any of the Fellows in my cohort, and I worried that making any experiences or perspectives public while also listening to those of my Knowles colleagues might change the assumed safety I felt as a Knowles Fellow in our professional community. In attending the district-sponsored workshop, I expected to be seated with people I did not know and prepared to engage in similarly difficult conversations as I did within the Knowles community, and I didn't want to feel self-conscious about speaking my truth. I was prepared to be vulnerable and honest with a group of strangers, but having my coworkers and principal in attendance completely changed the dynamic for me.

With the Knowles community, I found comfort in not having to think about how I was presenting myself or my opinions during any of the share-outs. There was an exercise in which we looked at racialized images with a partner and talked non-stop about whatever came to mind immediately after viewing them. A side-by-side juxtaposition of media reports about Trayvon Martin and the Dark Knight movie theater murderer, with very differing levels of aggressiveness in the headlines, left me silent and weeping as I immediately thought about how easily my brother's picture could be up there instead of Trayvon's. My partner instantly recognized my emotional state and sat in silence with me as I cried. Our shared Knowles norms allowed my partner to know when to break the rules of the seminar to be responsive to my

needs. I was very aware that I was still getting to know my staff during the district training, and I certainly didn't think engaging in conversations about race was going to make the relationship building any easier. Tearing up in front of strangers might not be as wholeheartedly understood.

However, there was discomfort in my Knowles experience in the form of not wanting to offend or upset anyone with whom I have a good relationship. The privilege questionnaire in the training asks each respondent to rank their ability to be around people of their own race, to live where they want to live, to shop where want to shop without harassment, and their confidence in being treated well as a result of their race. Essentially it asks you to rank how often you experience racially-charged moments. We completed this questionnaire at the end of day one, and my score was the lowest in the room.

I had noticed from the beginning of the Knowles seminar that I was one of the people, if not the person, with the darkest complexion in the room. All eyes were on me as we lined up and held our numbers against our chest, and I was acutely aware of how alone I was. Tears welled up in my eyes as I reflected on my surroundings, the people who knew me well but now only saw a painfully low single digit number held up against my chest, a stark contrast to their own high two- or three-digits. As our presenter played the closing music of the day, I was so embarrassed by my place in the line that I glued my eyes on the carpet and cried. I was left wondering if all the respect I worked so hard to gain with my Knowles colleagues was discarded now that they were faced with my societal standing.

The end of the privilege line was much a different experience with my district colleagues, and I was nowhere nearly as spotlighted. Clustered at the end of the line, we had to shift to make room for every additional teacher with a low score. We looked each other in the eye as if to say, "I know why you're here, and it has nothing to do with who you are as a person." In fact, there were so many people of color at the end of the line that we didn't have enough room to line up and became a blob. When Chance the Rapper's "Blessings (Reprise)" played over the speakers, many educators from my section couldn't help but bob and sway in reflective excitement. As we filed out of day one, I felt as if I had found my community and we were all standing together in solidarity of the cards we had been dealt due to our race.

Ayanna: When I first got to the meeting that took place at a larger public conference, there were many people in the room. From what I could see, there were White, Black, Asian, and Latinx people, over a hundred people, all sitting at different tables. I wasn't sure what I had in common with the Black people there aside from race. In this racially diverse setting, we also completed the

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> *Calling out a racist idea or thought or sentiment is assuming best intentions, because you are creating a space where conversations around it can still happen."*

privilege questionnaire Dwaina describes, and I found some people who had similar experiences or rated themselves the same as me.

Initially, upon a visual inspection, I wasn't quite sure who was similar to me in terms of how they walk the world. I think it's a known fact but one that, even for me, at times goes unarticulated: people of color have different lived experiences based on a range of factors even when they share the same race. That is the complexity of the Black experience—it's so different, so multifaceted, even if our skin is the same shade of brown. From what I remember, the people at my table had almond brown, chestnut brown, and even deep brown skin. I sat down at this table with all these people that ranked their privilege with respect to their racial identity as zero and I felt like I was among friends.

It surprised me that this shared ranking of experience caused me to feel a kinship with people that I'd just met and whom I may never talk to or see again. It was weird that, just on this point of commonality or community or similarity, I felt a togetherness that I don't often feel outside of my faith-based meetings or gatherings of family and friends. I felt like I was sitting with people who understood that even with my terminal degree, my middle class income, my history of living in houses owned by my parents, my own car, my history of national and international travel, my financial acumen and solvency—even with all this, I still didn't have privilege with respect to my race. It felt like they understood that space of uncertainty and sometimes fear that just has to do with being Black.

And even as I work to unpack my experience as a Black person, the facilitators reminded me that my experience in this world is and has always been gendered. And

speaking for myself, while I may believe that I can separate my experiences as a Black person from my experiences as a woman, it is quite difficult even as a philosophical endeavor because I've only walked the world as a Black girl or woman. In that moment I thought of the fear I felt for my husband's safety. This fear manifested right around the time there was a surge of news and media around the potential negative impact of police interaction with Black men. At this table with these people who shared my racial privilege ranking there was understanding. These people understood my fear because they don't experience privilege because of their race. So while I think diversity is necessary and beneficial because it brings multiple perspectives, broadens our viewpoints, and allows us to be more effective in our work, the thing that I miss when I'm the one point of racial diversity in a space is having more people that share and deeply understand my common experience.

For me, racial diversity allows for community in spaces where community might not have traditionally existed for me. At times, I feel like race is such a barrier to learning about shared experience because of the ways that white privilege pervades our society. At no point can I be certain that a white counterpart agrees that white privilege exists or is aware of the ways that it may impact me or people that look like me. And, even in this space of uncertainty, I know there might be a way to build community. A white person may not share my lived experience, but they may actually be a point of community around things that seem racially isolating to me. I just won't know if I don't reach out to learn about their experiences and share mine, similar to the ways I did during this conference.

What comes next? How has this experience impacted us? What actions have we taken since then to continue learning or growing in this area?

Dwaina: My first experience of the two days of professional development—the one organized by the Knowles Teacher Initiative—was emotionally draining and thought-provoking, to say the least. My second experience, with other teachers in my local context, definitely left me more frustrated than vulnerable. Both times, however, I saw extreme value in attending and participating, and I was pleasantly surprised to see how many white Knowles Fellows had taken the time and effort to be there for the conversation.

The Beyond Diversity workshop is not just a vehicle for helping white people talk about race. I engaged in activities that helped me reflect on my own biases and think about the ways I avoid talking about race and being courageous on a daily basis. Our in-depth conversation around "whiteness" opened my eyes up to the practices that I enforce and the implicit societal pressures that cause me to do so. Our facilitator's anecdote on lateness

> *Awareness of commonalities brings community where there wasn't community before."*

made me reflect on the ways I react to timeliness in my classroom and what norms I enforce by doing so. While being on time may be directly linked to 'white culture,' which is neither negative or positive, our reactions to varying states of timeliness are based on how our culture values that timeliness.

In thinking about courageous conversations, I have thought primarily about the whiteness behind "assume best intentions," which is actually a norm that my Knowles cohort established at our first meeting in 2014. Originally, I thought the norm was warranted as we were getting to know each other and were coming from vastly different contexts and backgrounds. Our Beyond Diversity presenter shared the sentiment: racism doesn't only come from bad people. I internalized this as: racism can come from anyone, and being able to call it out is a way of assuming best intentions even if it doesn't feel like it in the moment. Adhering to white fragility, the practice of tiptoeing around what we know is wrong or trying not to push too hard, has constantly been on my mind. In assuming best intentions, are we allowing for those who struggle with their own white fragility to flourish under its protective umbrella? Calling out a racist idea or thought or sentiment is assuming best intentions, because you are creating a space where conversations around it can still happen.

I am a Black educator, and I have navigated predominately white spaces all of my life. As a result, I am constantly evaluating what aspects of whiteness I have adopted and, even more interestingly, what aspects I push onto my students. I am grateful for the opportunity to have this formalized conversation around race in two different settings. I am hoping to make courageous conversations a defining characteristic of my teaching practice both in how I teach my students and how I interact with colleagues. If having courageous conversations (or anything aligned with this goal) is something your school or organization wants to deeply engage in, determining if everyone should engage in the training together or separately is integral to how it might be perceived and, down the road, enacted.

Ayanna: For years, I have thought about the benefits of diversity. But more recently I have been thinking about the benefits of inclusion. My experiences as an African American woman have led me to believe that diversity is really the thing that brings color to a space—that brings life to a space. I've always thought about diversity as something that builds empathy for people outside of a racial or gender group. I thought about it as something that builds awareness of the complexity within a racial group but I never really thought about it as something that brings community to people within that racial group.

When I went to the Courageous Conversations Beyond Diversity Training©, I felt a sense of camaraderie and a sense of community that I had not really attributed to diversity or inclusion. Since then, I have a stronger belief in having people share about themselves and be vulnerable with each other. When I am with other people that understand my lived experiences, even if our experiences are not exactly the same, I feel more able to share about myself and in some ways that sense of community helps me feel less alone in my perspective or experience.

In this America where there is so much hatred that's being spewed from all kinds of megaphones and so much anticipation of what the next hate crime is going to be against people of color, or people who are religious minorities, or people who are disabled, or people who are gay or pansexual, or people who are transgender or genderfluid, I think awareness of commonalities brings community where there wasn't community before. It creates a portrait of togetherness, confrontation, and respect from which we can continue to build.

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Dwaina Sookhoo is a first generation Haitian-American who identifies as Black. She is a 2014 Knowles Teaching Fellow and 2015 Math for America Early Career Fellow who is currently in her sixth year of teaching mathematics at the Academy for Young Writers in East New York, NY. Dwaina is very involved in work around equity, including participating in Critically Conscious Educators Rising at New York University and developing complex instruction practices in her classroom. Find her on Twitter at @mathapprentice_ or contact her via email at dwaina.sookhoo@knowlesteachers.org.

Ayanna Perry is a first generation Trinidadian-American who identifies as African American. She joined the Knowles Teacher Initiative in January 2014 and currently works as an Associate Director of the Teaching Fellows Program. Ayanna has been working to increase her knowledge and understanding of equity issues for more than a decade and is committed to increasing the capacity of those around her to be catalysts for real change. Find her on Twitter at @AyannaPerry2 or contact her via email at ayanna.perry@knowlesteachers.org.

Setting Teachers Up for Success: A Reflection on Providing Professional Development

Chris Lipski

Lessons in humility from what I thought was a great professional development session.

It's December 1. I sat down at my computer to find an email from our district's science coordinator with the subject "Chemistry teachers request."

Oh, great, I thought to myself. *More work*:

> The chemistry teachers on the curriculum development team were interested in learning more about some of the instructional strategies you use in the classroom. In particular, they mentioned wanting to learn more about the board meeting. I was wondering if you would be willing to share out these practices with other science teachers?

I won't lie—I was flattered. If you want me to do something, playing to my ego is a good strategy. Board meetings were something that I had been working *really* hard on improving in my classroom, and I was glad to hear that people had noticed.

Essentially, a "board meeting" (an instructional strategy from the American Modeling Teachers Association) is an opportunity for students to write their data, observations, and/or results from a lab experiment onto a whiteboard. The class then circles up to discuss what they see on the boards and use it to answer a question and further their understanding of a phenomenon. When the meeting

goes well, I've found that this strategy can lead to fruitful, authentic science discourse, so I wanted to share it with the district.

Also, I wanted to get some praise, and I knew that my students could make this look good.

So I volunteered to lead a short professional development session in February, and I cherry-picked a lot of what I considered to be good moments to share on video to create buy-in. It worked; I hooked my audience. They witnessed my students discussing the evidence from their lab, making connections between the class

> " *Much like the situation with my students in their stoichiometry unit, I had (in a sense) set the teachers in my district up for failure.*"

data, and assessing the validity of the data. All of the teachers said they would love to see their students engaging in these scientific practices. Once I had their attention, they tried participating in a board meeting themselves and were also quite successful! Everyone left for lunch on the professional development day feeling good. Teachers felt they had a new strategy. I felt that I had positively affected science teaching on a larger scale.

Two days later, the lead teacher on the chemistry curriculum team sent me an email:

> Just wanted to thank you again for your presentation to the chemistry teachers of your Board Meetings. I learned a lot and have gotten lots of positive feedback from several people about it.
>
> There's strong interest in making our Fall CLE a Board Meeting. I wonder if you would like to be involved also in the work the team is doing to help us make that happen successfully.

The CLE (or Common Learning Experience) is a district-mandated short series of lessons and assessment that all chemistry classes across the district experience, and now they wanted to use a strategy I presented! I also heard from our science coordinator that she put together an edited version of the video footage from my classroom to be shown at an upcoming district board meeting. I was starting to feel a little like a super teacher.

It was in this moment, though, that my internal feeling of satisfaction began to turn to horror. Despite being in an inquiry group this year with the working title "How not to lead like an asshole," I began to realize that I had done exactly that.

I came to this realization by considering what was happening in my classroom and with my students. This was just about the time I was teaching stoichiometry, and I had shifted to a new way of presenting the material. While I really liked the shift, I (like most teachers going through something the first time) realized that I hadn't done a great job preparing the students to be successful on the assessment. They weren't set up to succeed because I used a new strategy without fully considering all the necessary supports and time that would need to be implemented for it to work.

And that's when it hit me—I had done the same thing to those teachers at the February training. They were shown a (good) new tool, but were not given time to really think through the implications. And now it was set to be district-mandated! I realized there was a lot that I did not do for the teachers in the district:

What teachers did and reflected on:
- Watch a video of a great board meeting.
- Experience the logistics with a group of highly motivated, skilled educators.

What teachers didn't do or reflect on:
- The fact that board meetings have been my own personal inquiry for 2.5 years.
- The terrible whiteboards students will create the first time and the strategies I use to improve whiteboarding skills.
- The framing that goes into the first board meeting, including the fact that I met with English/history teachers to get common language around Socratic seminars.
- The first board meeting, which is always terribly awkward, and that, despite explicit instructions, students will simply present their boards and then stare at you waiting for guidance.
- The many iterations of "grading" and student reflection I have tried to improve the board meetings.
- The second board meeting is still not that great. For some classes, the third or fourth might not be great. This means more reflection and adjustments.
- Even "good" board meetings have a lot of room for improvement, as many students can disengage.
- This all takes loads of instructional time that I have decided is worth it (but I admit is likely not worth it in all contexts).
- These meetings can go in totally different directions than you planned for. I'm a flexible person, but not every teacher is going to be comfortable with this.

Much like the situation with my students in their stoichiometry unit, I had (in a sense) set the teachers in my district up for failure. I didn't want teachers to run to their classrooms and try this strategy, then discover it looked nothing like the video I showed. They might blame me, or themselves, or (even worse) the students. I realized I needed to re-think how I might engage teachers in training. I was given that opportunity just a few weeks later when I received another email:

> We are wondering if one of you (even a pair or triad) would like to work together to host a portion of the Summer Institute specifically for science teachers on Day 2 of the institute and act as general support to science teachers throughout the three days. This seems particularly timely with onset of NGSS *[Next Generation Science Standards]* and the

looming science test; as well as moving the work forward from the past few years.

I offered to run a session that would tackle the broad term "NGSS assessments." This time, I made some key changes to my approach:

1. I had a co-planner to talk through the ideas with me. She had run many successful professional development sessions and was great at giving advice about realistic timing and outcomes.

2. I didn't presume to know "what's best." In the first professional development I'd led, I had shown what I thought (and honestly still think) to be a "best practice." My mistake was assuming that it would be a "best practice" in all contexts. For the NGSS section, I provided assessment items that were labeled as "NGSS" and some that weren't. I did not present them as something perfect, something to strive for, or even something that was good at all, but instead as something that the teachers should evaluate.

3. I had teachers create a product that made sense for them. I asked teachers to (start) work on an assessment that they could use during the school year, and allowed them to use all, some, or none of the materials provided. After all, they know their students and teaching styles best; who am I to tell them what to put on the test?

As the June training came to a close, I found that the response to my session from the participants was remarkably similar to that in February: largely positive. The difference was in the reason for feeling positive. Although teachers did not leave with a "new tool," they did comment that the session felt useful. This was at first surprising, as during the session teachers had literally said the assessment we were looking at was "terrible." But on further reflection, teachers had actually been given the time to really process the work they were given and arrived at (the important!) conclusion that the resource was, well, bad.

As I continued to reflect, I felt that the session was useful to teachers because I had made two assumptions: (1) teachers, like students, need time to process new ideas and (2) teachers know their context best and have the professional acumen to decide how best to use (or not use) the resources they are given. Teachers like professional development trainings where they are given cool, new ideas—but teachers love professional development where they are given the opportunity to think through how these ideas might actually play out in their classroom and are given the autonomy to decide whether it will work in their context.

> *Teachers like professional development trainings where they are given cool, new ideas, but teachers love professional development where they are given the opportunity to think through how these ideas might actually play out in their classroom."*

As I continue to work formally and informally with my colleagues, I hope to remember that we are all eager learners who need the right level of support to succeed. Whether planning for a 10th grade chemistry lesson, or a district-wide training, it is crucial to consider what the students need, not what might make the presenter look best. I still have a way to go in my own development, but this experience has given me the insight I needed so that, in the future, I can support my colleagues in more productive ways.

Citation

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Chris Lipski,
a Knowles Senior Fellow, teaches chemistry and advisory at Hillsdale High School in San Mateo, California. He has worked with the Science Club, served as both a house leader and department chair, and is currently the Science Curriculum Coordinator for the San Mateo Union High School District. Reach Chris at christopher.lipski@knowlesteachers.org.

I am from Not Knowing When Her Car will Come Through the Snow

An audio story by Kirstin Milks with music by The Marshall Cloud

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Tracing my strengths as a teacher back to an inflection point in my own adolescence.

Teachers can make incredible connections with their students that strengthen their learning and growth. But what happens when there's a missed connection?

In this personal and moving audio piece inspired by George Ella Lyon's poem "Where I'm From," science teacher and Knowles Senior Fellow Kirstin Milks describes how an interaction with one of her own high school teachers echoed forward into her life as an educator.

"As a teacher, you have to be able to understand what stories might be out there in the world, so that you can recognize the underlying stories of the people—of the students—who come your way."

Listen to Kirstin's story on our website to hear her describe how her experiences have affected how she supports her students, and learn more about how she's grown from developing a personal practice of storytelling.

To hear Kirstin's reflection, listen to her audio piece on our website.

Content warning: This story contains themes of childhood trauma and mental illness.

"These stories, my true stories, are part of how my students and I work together and how we talk together, and how I can be there for them."

Listen to Kirstin's story at knowlesteachers.org/kaleidoscope.

Digital Media Citation
Milks, K. (2019, January). I am from not knowing when her car will come through the snow. [Audio file]. Retrieved from www.knowlesteachers.org/kaleidoscope.

Music Attribution
Music by The Marshall Cloud / Marshall Brown, used with permission.

Marshall Brown is a musician and vegan chef based in Chicago who records and performs as The Marshall Cloud.

Kirstin Milks,
a Knowles Senior Fellow and an editor-in-chief of Kaleidoscope, learns with and from AP Biology and Earth/space students at Bloomington High School South in Bloomington, Indiana. She'd like to thank the participants of the Beyond Words workshop at the 2018 Knowles Teacher Initiative Summer Meeting, the staff of Kaleidoscope, and her family for helping her learn to tell this story. Reach Kirstin at kirstin.milks@knowlesteachers.org.

Improving Mathematics at High Tech High with Improvement Science

Sarah Strong, Carlee Hollenbeck, and Will Haase

Three teachers share how focused data sharing and collaboration led to big shifts in instructional discussions and practices.

"When mathematics is taught as an open and creative subject, all about connections, learning, and growth and mistakes are encouraged, incredible things happen."
(Boaler, 2016, p. 20)

"What is the math like around here?"

We, all current or former math teachers at schools in the High Tech High organization, have been asked this question, again and again, by hundreds of parents, prospective students, visitors, and teachers. And, three years ago, answers to this question were highly inconsistent.

High Tech High is a progressive public charter school in southern California with a focus on providing every student what they need to succeed in college and life through project-based learning. In response to the question above, we found we could point to some evidence of high-quality project work, student achievement, and promising instructional practices in our schools—but we were unable to match our math classes with the ways other classes at our schools

were interpreting our organization's vision of equity, personalization, authentic work, and collaboration. These design principles drive our schools, and we each value them highly. So what was causing the mismatch for our math courses?

Conversations circled between stakeholders. Some pointed to high-stakes tests that stifled creativity. Others lamented the limited ways that colleges sort incoming students into "math-ready" and "not-math-ready." Still others described their perceptions of students' expectations about how math class should be structured, or the culturally pervasive belief that the best way to teach math is to be good at explaining things.

Clearly, we needed more support to build better math classes. Our first breakthrough came from reading Jo Boaler's book *Mathematical Mindsets* and attending a conference she hosted. In Boaler's work, we found robust, inspiring descriptions of how a math classroom can make math rigorous, creative, rich in connections, and driven by equitable structures. What wasn't yet clear to us was how to plan or evaluate our next steps towards the type of classrooms we envisioned.

Happily, our organization was selected to participate in the Knowles Teacher Initiative's Project ASCENT (Achieving STEM Course Effectiveness Through Networked Teachers). ASCENT connected us to a network of teachers around the country using improvement science, an idea made popular by the Carnegie Foundation, that empowers teachers with tools and strategies to make small incremental changes in their classrooms. Our network's goal was to work on increasing the number of high school

students experiencing high-quality science, technology, engineering and mathematics (STEM) education.

Our High Tech High team, inspired by Boaler's work, began by developing a focused aim to improve students' sense of agency (i.e., growth mindset, belongingness, and value) and their access to college with regards to math. We each found ourselves interested in different aspects of this goal.

- Carlee, a 12th grade teacher, decided to completely revamp her grading system in an effort to offer more helpful feedback to improve both the mindset and achievement of all of her seniors.

- Will, a 12th grade teacher in our organization, was interested in the idea of equitable access to college-level math and the often-frustrating ways that students are placed into, or not into, these classes at colleges and universities. He was invited by administrator Ben Daley to begin exploring ways of getting students out of remedial collegiate math by offering a college course with Will's support during students' spring semester of their senior year.

- Sarah, a ninth grade teacher, saw her young students often struggled to have confidence in their math ideas. She was interested in warm-up routines that focused on output of ideas rather than correct answers. She was also interested in ways that students could share their ideas and be the mathematical authorities in the classroom during this process.

As we attempted to learn more about students' experiences in math and how to impact them, we worked in three specific collaborative environments. First, we relied on the ASCENT network to help us create consistent surveys and other measurement tools to collect data on student agency. Secondly, we used our team of High Tech High teachers and administrators to unpack our data in regular meetings and consider how we might use what we learned. Lastly, and perhaps most importantly, our own students were integral in this work as we began regularly sharing data back with them and relying on their input to give us ideas on how to better support student agency.

These three collaborative data-sharing communities were able to elevate the High Tech High team's math work. In the following three vignettes, we highlight how data sharing and collaboration with different communities led to some big shifts in instructional discussions with colleagues and practices in our own classrooms and, in our final year together, the organization as a whole. We conclude with the ways the improvement structures continue to play out for math in our organization and

some tips for teachers on how to start collecting and sharing meaningful data in their own context.

Collaboration with the ASCENT network: Using regular check-ins with shared data to make a large-scale shift in grading

Carlee: The goal of our second meeting with the ASCENT network was using data to center our work. After breaking down the ways our students had responded to the ASCENT-wide survey we'd given about student perception of STEM, our team developed three specific survey questions that would help us understand our students' sense of agency in our classes. Other teams in the ASCENT network gave us feedback that helped us refine our survey questions.

With excitement about consistent data, our High Tech High team committed to giving our survey weekly and unpacking the data together to determine which of our changes were successful in promoting student agency. The questions we committed to asking our students, along with the targeted aspects of student perception probed, are shown in Table 1, and Figure 1 shows a semester-long plot of responses with the data organized by teacher. Such a graph is often called a run chart and is helpful in making sense of trends over time.

Table 1

Targeted Aspects of Students' Agency and Related Survey Questions

Survey Question Number	Prompt	Aspect of Agency Targeted
Q1	This week I asked questions when I didn't understand something.	belongingness, growth mindset
Q2	This week I felt comfortable sharing my ideas.	belongingness, value
Q3	This week I felt challenged in a good way.	value

Note. High Tech High math teachers administered a three question survey weekly to their students. Students scored aspects of their sense of agency in their math classes using a Likert scale.
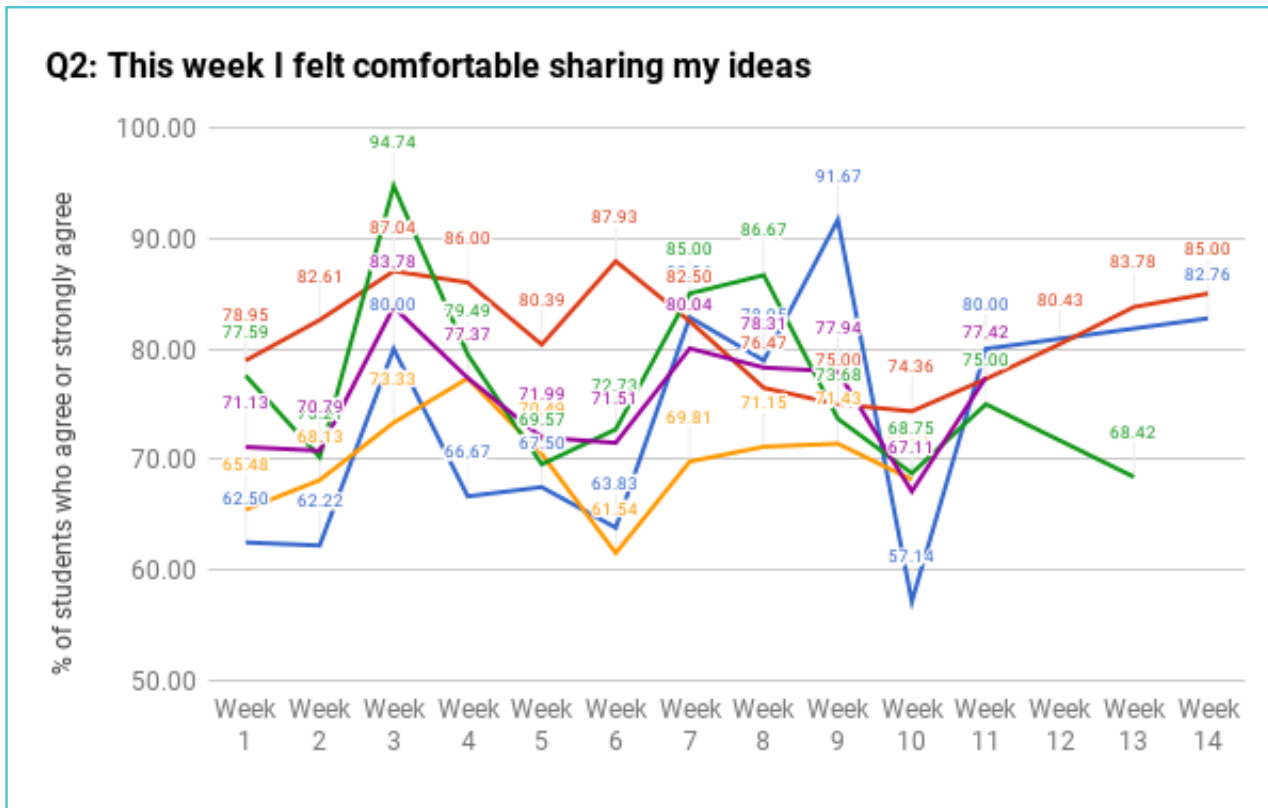
Figure 1. Students' responses to question 2 recorded over 14 weeks. Change in responses to Q2, as shown in Table 1, graphed over the duration of a semester. Each color in the run chart represents data from one teacher.

We quickly discovered that looking at this common data helped us calibrate success on changes to our classrooms aimed at promoting a growth mindset and intrinsic motivation to learn senior-level math, such as the scoreless grading system I was prototyping in my class (Strong & Hollenbeck, 2017). When the students would answer favorably on the survey in a week when I was attempting a particular intervention (like one-on-one check-ins or accountability buddies), I would pass that idea along to other members on our team to test so we could see how it translated into other settings. When an intervention didn't get very favorable responses (like weeks with too much reflection time), the team would discuss that together as well and, more specifically, I was prompted to change the type of feedback I gave my students.

The weekly classroom survey was vital because it began to drive my approach to the day-to-day problem-solving I did in the classroom. The questions we designed with the ASCENT network felt so powerful to me that I used them as a framework for collecting qualitative data by asking students to share their thoughts on them as part of grade proposals in our scoreless grading system. For me, being inspired by the network to collect small-scale, consistent data was revolutionary, both in my classroom's efforts to increase student agency and our work as a team.

Collaboration within the High Tech High team: Increasing student access to college by jumping with students over existing barriers

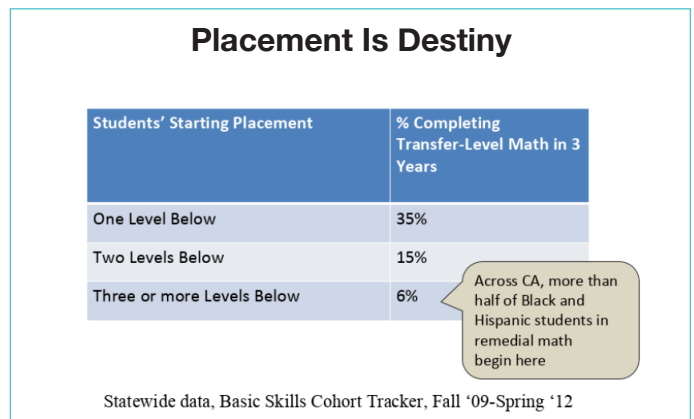**Will:** As the High Tech High team began diving into the

Figure 2. Relating entry-level college math placement and completion of transfer-level high school math. Adapted from "Acceleration: A Powerful Lever for Increasing Completion and Equity," by K. Hern, 2017, [PowerPoint slides]. Retrieved from https://slideplayer.com/slide/12512410/.

idea of student agency and the ways agency is linked to college access, it was integral to look at data both from our organization and from the state as a whole about what types of classroom structures promote students' success in high school and college mathematics.

At one of our meetings, administrator Ben Daley brought published data strongly implicating math remediation as one reason why students do not complete college. Math remediation is a higher education practice in which students who have not yet mastered high-school-level mathematics are required to enroll in remedial math courses as prerequisites for the math courses required for their degree. After digging into the data, it became clear to us that math remediation was a major problem, a virtual pit that students fall into and never get out. Figure 2 captures the scope of the problem with math remediation in California, our home state.

Looking at these alarming data, Ben and I began discussing ideas for how we might create greater college access for our students by offering a high-school version of an accelerated pathway. Colleges with accelerated pathways allow students to continue to develop their mathematics skills while engaging with degree-required mathematics in environments that are both challenging and supportive. Data show these programs can be highly effective; as described by the California Acceleration Project, "students' odds of completing college English were 2.3 times higher in effective accelerated pathways than in traditional remediation, and [the odds of completing college-level mathematics were] 4.5 times higher in accelerated statistics pathways" (Hern & Brezina, 2016, Accelerating Results, para. 1).

Based on our research, Ben asked me to create our own version of an accelerated pathway system in the High Tech High school where I work. Our goal was to provide all students the opportunity to enroll in (and hopefully pass) college-level courses in English and math at their high school. This would, we thought, allow students the opportunity to develop their skills in both disciplinary thinking and study habits while still being supported by their school's teachers.

Ben and I quickly began the logistical work of making this program a reality for all of the seniors at my school. We collaborated with all the stakeholders involved and enrolled the majority of our seniors (about 70%) in at least one college class in the spring semester of 2018. During the course, we used our ASCENT improvement team to quickly iterate a variety of interventions by trying new ways to support the students, collecting data, and sharing back on what worked and what didn't. Through the iteration process, teachers prototyped

and refined procedures for one-on-one check-ins with students, incentivized and supported out-of-class study groups, and co-planned individualized study schedules with students.

Through our research and that close work with students in the class, we also learned that, as has been found nationally (Page et al., 2017), our lower-income students were the least likely of our eligible students to complete the Free Application for Federal Student Aid (FAFSA). The FAFSA is the paperwork that allows students to apply for financial aid to pay for college, and completing it is one of the best predictors that a student will be able to continue an education after high school (Warick, 2017). As a result of our new knowledge, we began to use course time to identify students who needed assistance in completing this important form. Due in part to this work, we have increased low-income-student Cal Grant award rates by 14% in the past two years. One step in the process, on-time FAFSA completion, has increased for low-income students by 16% since 2013, and we are hopeful this will lead to more low-income students graduating from college in the future.

We are still waiting to see how participation in the college class affects college retention, but I am optimistic. At the very least, our improvement work provided us deep insight into the problems of remediation and gave us a starting point to focus our efforts and continue to improve. We continue to offer the class but are trying to keep the class size smaller, scaling down to prioritize enrollment for students who are first-generation college-bound, come from low-income families, and/or identify as people of color. We also changed professors to an instructor who deeply

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>
> *I can't emphasize enough how valuable it was to keep asking our team to clarify exactly what we wanted to change, why it was important, and how we would know when we succeeded."*

prioritizes inclusive classroom practices and pedagogy.

For myself, the benefits of our school's improvement science work have been twofold. First, working within the structure of improvement science was critical in helping us identify the specific and measurable aim that we wanted to improve. I can't emphasize enough how valuable it was to keep asking our team to clarify exactly what we wanted to change, why it was important, and how we would know when we succeeded. Creating this clear and common vision was illuminating, motivating, and really helped focus our thoughts and energies.

The second way improvement science helped us was by giving us a clear iterative structure where we as a team could keep coming back to the table with new ideas, sharing them, and trying them out. Having a structure where peers could collaborate and innovate in a systematic way was very helpful to me and, I think, would be helpful to any team. While my students were trying to fill out the FAFSA as well as while they were in the college class, I was constantly experimenting with ways to help them and running these experiments past our ASCENT group. It was thorny, and didn't feel like a success at every point in the process, but we now see that the work was worth it. I deeply value the improvement science work we did as a team and am excited as elements of it continue to find their way into our school system as a whole.

Collaboration with students: Deploying improvement science authentically in the math classroom

Sarah: A seemingly benign question, "Did you ask the students?", became the most important reflection for improving student agency in my classroom.

In fall 2017, I decided the focus of my improvement for the first few months would be the warm-up structures in my class. The purpose of the shift was to redirect students' mindset around math learning by measuring idea generation, sense-making, and sharing out with others as opposed to solely answer getting. This work's foundation was creating norms and using a similar question structure for each day's warm-up: "Write everything you know, think you know, or wonder about this math problem or question."

There were moments during my iterations where changes seemed like improvements based on my observations, and yet the data that I was collecting from my students was not as clear. Based on our improvement team's suggestion, I began sharing both observational and quantitative data back with students to ask for help in making positive changes.

The first way I brought students into the data collection

> *The first way I brought students into the data collection process was by having them take ownership of their own data."*

process was by having them take ownership of their own data. I shared with them a document that they taped on the front of their warm-up folder that served as a run chart for the number of ideas they generated each day during warm-up time. They could use this run chart to reflect on days where they had a lot of ideas and days where they had less. I also had students begin setting individualized goals on idea generation for themselves, which helped to personalize the classroom even more. As the semester continued, students kept track of their own data on their run charts and then shared back with me how often they were meeting their "warm-up goal."

As the semester passed, I observed that—despite my norm-setting and question asking—students' ideas were dwindling and they weren't as frequently meeting their warm-up goals. My team suggested that I share samples of quality student work with the students, then ask for help in brainstorming a solution. After diving into

- Write a word problem
- Use really big numbers, negative numbers, or decimals
- Make a table—look for patterns on it!!!
- Look for stuff you know—even if it's a 2!
- Make a graph and find the slope
- Find the area; connect it to other math you know
- Ask a lot of questions
- Try to rephrase or draw a picture

Figure 3. Ways to meet our warm-up goals. Student-generated list of approaches to generate ideas about a warm-up problem in math classes.
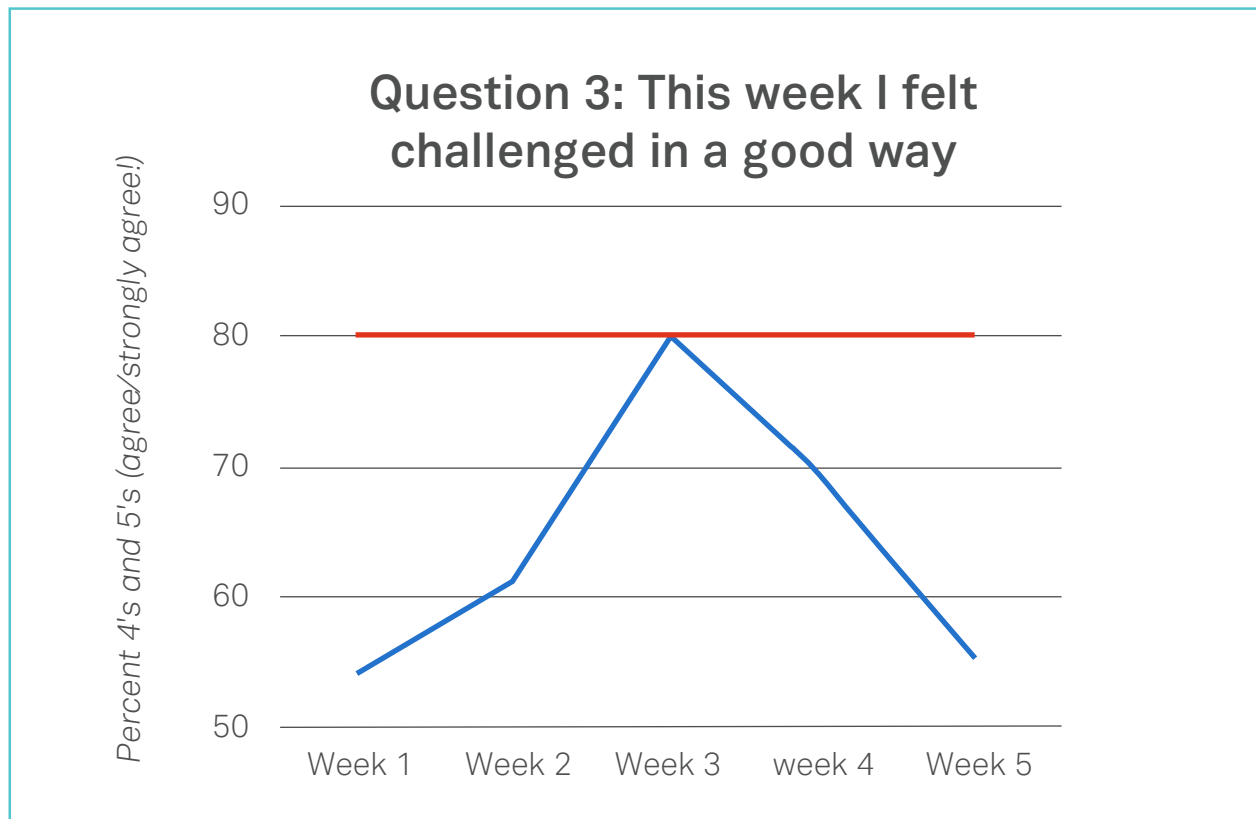
Question 3: This week I felt challenged in a good way

Figure 4. Sarah's students' perception of challenge from week 1 to week 5. Students reported a drop in their perception of challenge in Sarah's math class from Week 3 to Week 5.

the samples, my students generated a list of different ways that they could meet their warm-up goals, shown in Figure 3. This list became a foundational part of our warm-up routine moving forward, and my students began finding more success around idea generation once again.

Another way that I collaborated with students was in sharing data from our weekly survey. One week, my data showed a significant drop in the question "This week I felt challenged in a good way," as shown in Figure 4. From my observations, I knew the students had all been working hard on their portfolios all week and revising old assignments, so I couldn't understand why the drop in student perception had happened. The improvement team suggested I show the run chart to the students and see what they had to say about it.

The students provided insight to me that, because they didn't learn anything "new" and instead were just revising old work, the week didn't "feel" hard. I was able to not only explain the rationale for having weeks like this, but also hear from them about how we could ensure that their brains were still working hard (like having a warm-up with a new idea or a short lecture at some point during the week).

In the end, improvement science and our entire

network helped me identify new ways of collecting data about my students. Furthermore, sharing the data back with students can lead to changing ideas and classroom shifts that are even more impactful than anything I had considered.

Improvement moving forward

The High Tech High team, in conjunction with our students and the broader ASCENT network, is still on the journey of improving math education at our schools. Although the ASCENT network is no longer meeting together regularly, many math teachers in our organization have continued to use the improvement structures we've learned and regularly share data collection routines with each other. As a result, teachers have broadly initiated survey routines with questions about agency, and many of us use weekly check-ins with our students. Improvement science and the ASCENT network afforded us the collaborative space, structures, and data to see that the work we are doing is gaining momentum around both student agency and access to college.

In bringing improvement science into our own teaching practice, we have had shifts in the educational

discussions about what was going in our classrooms. For other teachers hoping to have similar progress, we recommend the following:

- **Start collecting data right now (and define data broadly)**. Often collecting data seems cumbersome and time-consuming, but a quick exit card, tracking how many times students share during class discussions, or noting how many ideas students generate during a warm-up routine are all ways to gather quick data and get an interesting snapshot of your class. Just make sure the data collection aligns with what you value for your students!

- **Find one or two teachers to collaborate with regularly, and do it now**. Once you have a quick data collection tool you like, get another teacher to collect data as well. Find a short period of time (even only 10 minutes) to share data together weekly and unpack what students are saying and doing, according to your data collection. Use each other as sounding boards to plan next steps.

- **Bring student voice into your data collection and analysis as often as possible**. Sharing that data back with students can help them be clear about your hopes and expectations for the class and encourage them to seek improvement and progress in things like collaboration, brainstorming, quality work, and their sense of agency. Sharing graphs and raw data both is a powerful lever for change and helps give students a voice in the design and trajectory of the class.

This work has helped us to clarify exactly what we want math to be at the High Tech High schools: an open and creative subject all about connections and growth. Short incremental changes with regular data sharing sessions with the broader network, each other, and students made this work manageable and exciting, and truly accelerated our improvement process. We hope it will for you as well.

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Citation

Sarah Strong

is a ninth and tenth grade math teacher at High Tech High in San Diego, California. She also works for the High Tech High Graduate School of Education, teaching math methods courses and supporting the new math teachers in the organization. In her 13 years in the organization, she has taught middle and high school, helped run the Math Agency Improvement Communities, led workshops on project-based learning, and been a leader of the High Tech High ASCENT team. She loves creating interdisciplinary projects with her teaching partners that use math as a lens to better understand the world around them! Reach Sarah at sstrong@hightechhigh.org.

Carlee Hollenbeck,

a Knowles Senior Fellow, is currently a PhD student in mathematics education at Western Michigan University and also a Mathematical Opportunity in Student Thinking research assistant. For six years, she was a 12th grade teacher at High Tech High North County in San Marcos, California. She also served as a leader of the High Tech High ASCENT team. Her passion for studying data, discussing systemic improvements in mathematics education, and finding strategies to impact student agency led her to pursue more education and opportunities. She loves talking about mindset and how to make the math classroom fun for all, with lots of puns and jokes! Reach Carlee at carlee.hollenbeck@knowlesteachers.org.

Will Haase

has taught math at High Tech High International in San Diego, California, for the past 13 years and was part of the High Tech High ASCENT team for three years. Will has also taught a variety of education classes for the High Tech High Graduate School to beginning teachers and visitors. Will is passionate about using data, research, and improvement structures to innovate new ways to help low-income students succeed in high school, college, and beyond. Reach Will at whaase@ hightechhigh.org.

Benefits of a Teacher Observation Group

Kylie Bertram

A personal reflection on the power of regional observation groups—and a call to action to create your own.

Before my first year of teaching, I interviewed at a lot of schools. I was offered two positions: one teaching biology and chemistry at a high school 15 minutes from my home, the other teaching seventh grade science at a middle school 45 minutes away. The high school let me know that I would be on my own, with no professional learning community (PLC) or common planning time with teachers teaching the same courses. The middle school had common planning times for PLCs, and my PLC would include a National Board Certified Teacher who was excited to work with and mentor a new teacher.

Did I want to teach middle school? No. Did I want to learn how to become a better teacher and not be tossed to the wolves? Yes. I took the job that offered support, even though it was not my ideal position.

I had a great year. I experienced the ups and downs of a first-year teacher, but at every down I had my mentor, Greg, to debrief with, to challenge my ideas, and to help me grow my skills. When I was nervous to try a new technique in my classroom, Greg gave me the confidence to attempt it during first period. Then we could debrief during second period and tweak my lesson for the rest of the day. When I struggled with student behaviors, Greg talked me through the conversation I could have with a given student, including acting out possible responses from the student based on my statements. When I didn't

know at first how to make the dreaded negative phone call home, Greg walked me through it. At the end of the day, I could almost always leave school feeling proud of my work and ready for the next day. I loved teaching and knew I made the right career choice.

Then life happened. My spouse got orders to move from the Washington, D.C., area to Washington State the summer after my first year of teaching. I applied for and accepted a job at a high school. I knew I would not have the same support I had the year before. To say I was nervous about my second year was an understatement.

At that summer's Knowles Teacher Initiative Summer Meeting, I was invited to lunch by other Fellows from the Pacific Northwest so I could learn about their observation group, the Northwest Regional Fellows (NWRF). I was a first-year Teaching Fellow, had just moved to Washington a few weeks before, and am generally introverted and struggle to make new friends. I will always remember how welcoming they were and how comfortable they made me feel. I knew the support I would gain from being a part of this group would make a difference for me from the start.

At lunch, I learned how the group was established. Two teachers in the region, Meg Gildea and Abby Daane, wanted to develop a larger learning community among teachers in the Pacific Northwest to increase opportunities to learn from each other and their different contexts. Abby and Meg started NWRF with informal dinner meet-ups. As the group grew, they began to hold dinner meetings in different cities. At one funding planning meeting, Abby had the idea to observe classrooms. While the observation was a lot of work to plan initially, the result

was a stimulating conversation in the afternoon followed by dinner at Abby's house afterwards. This day sparked the motivation to start an official regional observation group. After writing grant proposals to Knowles to pay for dinner, substitute teachers, and travel costs, Knowles Teaching Fellows were able to opt-in to participate in the NWRF group.

Soon, members of the group began inviting colleagues and the composition of the group was expanded beyond Knowles Fellows. This organizational change led to a change in our name: we are now Observe Northwest (ONW). Each year, ONW recruits new Teaching Fellows at the Knowles Teacher Initiative Summer Conference, and current members recruit colleagues to join. The group has expanded from casual meetings of Knowles Fellows to organized observations followed by a conversational reflection, then a social dinner, once in the fall and once in the spring.

Why invest the time and energy to form or join a regional group? First, a local observation group builds fellowship among teachers who teach in the same region at different schools, in different contexts. I was an early-career teacher new to the area, and the observation group gave me the opportunity to discuss my new classroom and context with teachers who did not work in my building. I was grateful for the group's fresh perspectives on struggles I couldn't always define or assess properly within my own context. I was able to expand my professional community, something I desperately needed to support my practice. Observations also provide the opportunity to engage with colleagues around meaningful inquiry. Members of ONW enjoy being able to discuss and analyze observational trends across multiple classrooms and teachers with a community of teachers from different contexts.

Members of the group also agree that meetings in the fall and spring always occur at times when we are in need

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> *I can now see that the leadership opportunity ONW provided in a supportive, community-based organization was imperative in order for me to gain the confidence I needed to branch into leadership roles in other aspects of teaching."*

of a boost of some kind. For example, I may be feeling down about my abilities and the way things are going in my classroom. However, I'll go to an observation and see practices I already know are wonderful but had forgotten about, like pointing out positive behaviors instead of negative behaviors. The observation and conversation with other teachers reminds me how important and how easy those types of practices are to implement. I always leave the observations feeling motivated and better equipped to deal with the issues I am facing.

Second, a local observation group also provides opportunities for leadership in a non-threatening, low-risk environment. While I am introverted, I am also passionate about working to become a teacher leader. It was with this mindset that I took on an organizational leadership role at the Knowles Teacher Initiative Summer Meeting before my third year of teaching. Passing and receiving the torch of leadership was not easy. ONW Fellows had watched the hard work that Mike Town and Alex Steinkamp, the self-proclaimed "crank-turners" of the group, had put in for the past few years. In contrast, that year I was starting my third year of teaching at a third new school. Taking on leading ONW meant leading a group of teachers who were much more experienced than me, both at teaching and at leadership.

I was intimidated by taking on this role, but Mike and Alex coached and mentored me, and all members of the group consistently encouraged me. That year, we were able to meet at Mike's school to establish other leadership roles and create documents to support

planning of the group's work. These documents made the group self-sustaining by allowing smoother transitions of leadership, which also supported our goal of providing more low-stakes leadership opportunities to teachers. Read more about ONW's leadership transition in "The Machines Around Us" by Alex Steinkamp (2019). Because of my experiences with ONW, I now lead a professional learning community at my school and am contributing to district-level science initiatives. I can now see that the leadership opportunity ONW provided in a supportive, community-based organization was imperative in order for me to gain the confidence I needed to branch into leadership roles in other aspects of teaching.

Last, a local observation group provides opportunities to see other teachers' practice and classrooms and get feedback. The opportunity to see others' teaching practice allows you to reflect on practices that are the norm in your classroom, evaluate whether these are the practices you'd like to be the norm, and if not, how you might begin to shift your practice. There are always practices I see during observations that inspire me to improve and try new things. Being at someone else's school, in the room with the teacher and the students, and reflecting with the teacher at the end of the day gives me the opportunity to implement new ideas or improve my own teaching practice. Recently, we observed a Knowles Fellow and her colleague in Oregon. Their use of interactive notebooks, a practice I had been using but found challenging, was so impressive. During the observation day and during the reflective debrief, I was able to watch their implementation of the notebooks, make notes to myself, ask plenty of questions, and reflect on why I didn't feel like similar notebooks were working in my classroom. I took away practices that I could implement immediately that following Monday.

Sometimes, you will observe at a school that has similar demographics to yours, but will still pick up on different norms and nuances. Sometimes, you will observe at a school that could not be more different than yours. Both experiences always lead me to reflect more deeply on the role I play in shaping the norms and culture within my classroom. The community of the observation group provides a safe space for me to grapple with the big, the small, and the sometimes scary parts of being an educator. The passion, strategies, and practices shared on observation days always make me more hopeful—a powerful emotion for an educator.

If you are interested in starting and maintaining an observation group, I want to emphasize intentionally inviting people into the group. ONW has made a difference in both my professional and personal satisfaction, and I never would have joined had I not been intentionally invited. Invite new teachers you know, colleagues at your school, and especially reach out to

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> *The passion, strategies, and practices shared on observation days always make me more hopeful—a powerful emotion for an educator."*

those who may be more introverted. You never know the difference it could make.

Reference

Steinkamp, A. (2019). The machines around us. *Kaleidoscope: Educator Voices and Perspectives, 6*(1), 25–28.

Kylie Bertram,
a 2015 Knowles Teaching Fellow and National Board Certified Teacher, is a science teacher in Federal Way, Washington. Over the course of her first five years of teaching, she has taught middle school life science, ninth grade biology, Pre-AICE (Advanced International Certificate of Education) Biology, AICE Biology, and Principles of Biomedical Science. Outside of the classroom, Kylie advises We Act Club, a club focused on positive change in the community and the world, and serves on the curriculum writing team for her school district. Reach Kylie at kylie.bertram@knowlesteachers.org.

The Machines Around Us

Alex Steinkamp

> **In spite of their enormity, engaging with the systems that drive education is an important part of teachers' work to support student learning.**

"Just be careful that you don't lose your focus on the classroom. Ultimately, effective teachers are a rare commodity, and the work you do in the classroom has huge impact on students. The greatest impact you can have is by being the best teacher you can be for your students. Don't let all these meetings take things away from your classroom practice."

My colleague meant well, but as I walked to my afternoon meeting, I had no idea how to respond to this sentiment. I was humbled by my colleague's estimation of my effectiveness as a teacher and frustrated by his dismissal of the importance of my involvement in department- and building-level work.

I had multiple conversations with this same colleague about problems beyond our classroom (e.g., particular school policies and district mandates) that impacted our work in the classroom. Whirring, impersonal, illogical, machines encroached on each of our classrooms in subtle and not-so-subtle ways. These systems, these machines, were running in ways that disrupted the work of teachers and learning of students, while carrying the label of educational reform and improvement.

But the challenge is a cycle driven from both sides: no system would be intentionally designed to misserve students and teachers, and no reasonable person would like to engage with a hulking system that appears from their perspective to produce more harm than good. Disengagement only further stagnates systems in broken cycles, and broken systems only encourage further disengagement.

Knowing that these metaphorical machines are built by people just as real machines are, I am driven to understand the motivation behind their design and look for access points to fix them. This engagement is not a result of my benevolence, but a result of my experience. My time with the regional teacher observation group I helped organize helped me appreciate the importance of working with "machines."

How I came to see the machines around me

Sometimes, the work of a group is reliant upon the superhuman efforts of a few individuals manually catching every ball in the air and tying each loose end. There is no defined process; it is just "Alex's thing." Nobody really knows how he does it, but thank goodness he does! The group's outcomes are dependent on a few specific crank-turners; without them, nothing moves, and the group ceases. We all know these sorts of systems. Sometimes this is the only way in which a group functions. And we all know that when the crank-turner is no longer at the helm, substantial challenges arise.

This was the case in our regional observation group, Observe Northwest (ONW). Once per semester we organized a visit to a member's school to observe the host's classroom and those of their participating colleagues. The value for participants was huge: we

had the opportunity to spend a full day in a new context, seeing different students, classroom structures, cultural expectations, and teaching practices. By the end of the day, we left with a fresh perspective on the challenges we faced in our own contexts, as well as discrete learnings that nobody could anticipate. In the beginning, our numbers were small—at most four or five teachers visiting on a single day.

When I started participating, Knowles Senior Fellow Mike Town was the primary 'crank-turner' for the group. He sent all the emails, double checked the dates, and submitted our grants. Mike had the good sense to hook me into the process and ensure that the organization continued to produce the positive effects for which we aimed. I became a co-crank-turner.

Over time, however, the group grew to over a dozen teachers visiting on a given day, and the logistical load began to weigh on us. Making sure everything was in order for all of us to arrive in the right classroom at the right school at the right time was a heavy workload, not to mention figuring out where and how to organize our work, securing a place to eat and inviting colleagues to join our group. Once I felt the first wave of dread at planning the next meeting, I knew something needed to be done. Mike and I were spending so much time chasing the loose threads that I couldn't enjoy the learning and growth that came from our meetings.

Building our machine

Through this difficulty, Mike and I realized that much of the behind-the-scenes work did not require any particular skill or talent, but was simply a lot of individual tasks that needed to happen. That work could have been done by some system, but that system didn't exist. We knew this information could be externalized, but the time we spent thinking about the group was always around actually doing our observation meetings. The additional task of 'record and explain what you're doing' was infeasible for both of us.

Does your group need to set up a "machine" to help it work? Machines can help reduce mental load and allow for transfer of knowledge. If you decide you need one, consider how you can carve out the time to create it.

The machine had to be built, and building the machine had to be considered as work separate from the goals of the group. It served a higher purpose: to allow the observation group to continue to function in the absence of individuals who knew how to juggle all the balls.

Just as Mike brought me into the fold, I brought Kylie Bertram into this challenge to help us distribute our knowledge and efforts. Mike, Kylie, and I planned a day separate from the group to spend time recording and creating frameworks for how to run our meetings. We needed to carve out time for ourselves to focus on articulating all of the things that we ran around doing, and making them approachable and understandable by anyone. We wrote a grant to support one full day of in-person time for this work. We created timelines, email outlines, spreadsheets, agenda templates and checklists, as shown in Figure 1. Read more about ONW's leadership transition in "Benefits of a Teacher Observation Group" by Kylie Bertram (2019).

Leader Checklist

This checklist is intended to support the lead organizer coordinate with the host teacher and group and communicate information effectively for a successful ONW meeting!

- ❏ Secure annual funding
    - ❏ Past proposals
- ❏ Choose hosts (summer meeting) Considerations:
    - ❏ Typically someone in a new context (within ~3 years?)
    - ❏ Typically a second year fellow or later
    - ❏ Consider opportunity for multiple schools in one day & over several years
        - ❏ Consider the benefits and drawbacks for these options.
    - ❏ Consider different regions for Fall and Spring observations
    - ❏ Host desire for increased leadership visibility at school
- ❏ Check first-pass interest of fellows (& friends) through Google Form (template here) (Right after summer meeting)
- ❏ Selection of dates
    - ❏ Hosts state possible dates
    - ❏ Dates posted on doodle within two weeks of summer meeting
    - ❏ Dates chosen by September 1st
    - ❏ Contact list
- ❏ Email participants the finalized dates (email by end of August)

Figure 1. Sample ONW document. An excerpt of the master checklist created to be used by the primary organizer of the observation group. Links lead to associated documents to keep everything in one place.

The challenges we faced now feel almost trivial. I have hesitated to write about this process partly because I worried that I was making a mountain out of a molehill. Remembering the reality of the near-burnout for multiple members of our group, though, reminds me that this work had value.

While it felt somewhat silly to be able to articulate all of this 'hard work' we had been doing in a finite set of simple documents, it would have been impossible for us to create those documents from the outset. We wouldn't have even known what we needed.

It took us running the whole system for multiple years before it was even possible to know not only the different challenges and obstacles that the system needed to handle, but also where the system could be less explicitly defined. Rushing to create a mechanism too soon would have been a misuse of our energy, as we would have undoubtedly spent our focus on things that were less essential to our work.

Challenges in maintaining our machine

These tools have helped keep our observation group running. They have also helped hosts feel less stressed about organizing. Our hope was that leadership could easily shift among members, without many hiccups in the effectiveness of the group's work. There is still the need for a person to be at the helm, pulling the right levers in the right order.

Have you created a machine? Consider how the individuals that interact with that system may understand or misunderstand how/why the machine works.
Are you operating a machine? Consider how you might make visible what moves you still have to make manually and what moves are taken as a function of the machine.

The challenge is that from outside the driver's seat leadership can seem intimidating, because while the machine is handling a lot of things, the end product can look like it was produced only by costly superhuman effort. Until you sit in the controller's chair, you might not realize that the system just needs you to follow a checklist. I am still reflecting on ways to make more transparent the way in which our tools support the work of the observation group to help others feel capable of running the machine. The underpinnings of the machine need to be understood by the users. It is a thing within their control.

With a complex system, making any changes can seem daunting because the system required effort to construct and now exists beyond any individual. It took us all of this work to get things set up; will changing things require a full rebuild? In our group, we

are starting to reflect on how much structure should be imposed on our observations and how much direct feedback should be given to those who were observed. In spite of this being a pretty foundational question to the work of the group, the part of our machine that focuses on the observations themselves can be tuned and changed independently of many of the other parts. We are able to do this only because we carefully took the time to understand each part of our process, and created spaces where each part is delineated from the others.

This part-swapping still needs to be treated as machine maintenance and not just a part of the functioning of the group. It is important to address this change in a time and space that allows for thoughtful consideration on how one change will impact other functions of the system: Will using one observation structure over another change what the individual is taking away from the day? Does this well-intended shift create undue mental load on participants?

Does your machine serve its purpose? Consider the indicators that tell you that the process in place meets the needs you have. If it isn't meeting its purpose, consider what time and space is needed to find the access points to do the repairs.

These questions cannot be answered well while the machine is doing its work, just as real machines cannot be repaired while they are running. Machine maintenance requires an operator to intentionally step away from its operation. Otherwise, maintenance can feel disruptive, dangerous, and difficult. When a system disrupts rather than facilitates the work of a group, the buy-in of the participants may be lost, and the entire system may slouch towards breakdown.

Whose responsibility is it?

I enjoy analyzing machines like this. I like designing them, I like building them, and I like maintaining them. Many teachers, like my colleague from the start of this piece, see these machines as heartless and harmful, and believe that it is better to shield yourself and your

students from a poorly running system than to spend the time trying to fix it.

> *Do people fear a particular machine?*
> *Their perspective and understanding of what is happening at the ground level may be able to identify places to help the machine function.*

I understand that instinct. Without a doubt, there are times when a system is put in place without fully considering the impacts it may have on the stakeholders. Even with the best planning and careful consideration, machines sometimes create unintended consequences. And in other cases, a machine comes into existence without anyone realizing it ("Oh, I thought that was just the way we had to do it"). Those unintentional machines can be destructive, and it is natural for teachers to shield themselves and their students from those systems.

At the same time, because teachers are often the ones who most directly experience and observe the impacts these systems have on our students, we have information that the system may not be able to detect on its own. I believe that paying attention to how those machines work is crucial to the functioning of our educational system at all levels, and I want to help those challenges be seen and addressed.

I want to ask these questions:
- Is there a machine running? Is there a need for one?
- How was it designed?
- Has a machine been built without anyone really knowing it, and thus is producing results that aren't what people want?
- What do we really want this machine to be accomplishing?
- What is its current output?
- Who relies on the different parts of this machine?

I don't know whose job it is to ask those questions. So far, in my experience, it hasn't been anyone's job. While it feels overwhelming at times, I want to continue to engage with these challenges because systems, often unintentionally or because they come into existence

without purposeful planning, can get in the way of learning for both teachers and students. Regardless of their origins, these machines exist around us in education, and they require careful consideration to function properly. I don't think we should be afraid of machines, and I want us, as teachers, to help adjust them to better meet our needs and the needs of our students.

If you are interested in the particular problem of organizing a regional observation group, I am glad to share our supporting documents. Please reach out via email (see below).

Reference

Bertram, K. (2019). Benefits of a teacher observation group. *Kaleidoscope: Educator Voices and Perspectives, 6*(1), 22–24.

Alex Steinkamp,
a Knowles Senior Fellow, is a physical science and physics teacher who recently began working abroad in Nagoya, Japan. Previously, he taught in Olympia, Washington. He strives to support school communities as they consider and adjust their systems to best serve student needs and aid in the work of classroom teachers. Reach Alex at alex.steinkamp@ knowlesteachers.org.

"The Persona of a Teacher"

Joe Cossette

Is this really me, or a character I've invented?

As a scientist and teacher, I like to make things clear:
If a system receives inputs, certain outputs should appear;
When I put a plant in sunlight, and give it water, it should grow;
When I drop a ball and let it fall, I know which way that it should go.

On the whole, we find connections relating everything;
In isolation, we can see outcomes our actions bring.
We don't need to know the details of what makes our world respond;
As long as it repeats, we know right where it belongs.

Teaching, I'm afraid, is much messier than science.
It is built on hopes, and fears, independence, and reliance,
The way things are presented, and the way that they're received,
The things that bring us struggle, and the things that we've achieved.

Science would predict that, if a lesson finds success,
The instruction should repeat and produce the same process,
But the variables have changed with different students, different classes.
That A-plus bit of teaching is now viewed through different glasses.

I think that the profession wants to test and quantify,
To think of things as actions to check off and verify,
But the rubric doesn't score what the rubric cannot see:
A hidden, special something makes the evals disagree.

I have always been aware of the existence of a feeling
That makes some teachers magical, inspiring, and appealing.

This "it" factor of sorts cannot be learned from a book;
Sometimes it's wit and humor, or a reassuring look,

Sometimes it's being flexible when no one else will budge,
Sometimes it's holding ground when students need a steady judge,
And sometimes it is age, gender, background, race, or creed
That helps establish bonds that a certain student needs.

So what is the persona that I've crafted and presented?
Is this really me, or a character I've invented?
If I'm always intentional, does it make me less authentic?
Is a teacher's persona something more, or is it propped up by aesthetic?

When my students face struggles, I try to be understanding.
I push all my students, but I'm not too demanding.
I show them I care through dedication and through prep,
But if the plan takes a turn I'm not afraid to sidestep.

I'm quick to respond with a line or a joke.
I try hard to be "with it" or (as the kids say) "woke."
When I teach, I perform to make our lessons exciting,
But does that improve their learning or just give it nicer lighting?

The person that we are is how our students find their space.
They see the way we act, and they analyze our face,
This also shapes instruction and the style we present.
There's more to our curriculum than worksheets and content.

In a world and a school where content is king,
I think we should reflect on the persona we bring.
How do we make visible these aspects from within?
How can we define ourselves from the moment we begin?

And how do we respect that there are other ways as well
That are as (or more) effective to help students to excel?
And probably most essential, how can we quantify the hidden
So the evals are wholistic and the rubrics are rewritten?

There may not be an answer, but I think that it's all right.
My goal here is reflection and perhaps to cast a light:
We all provide our "something" and we all deserve our feature
Because we live our lives in the persona of a teacher.

Joe Cossette

is a 2014 Knowles Teaching Fellow who teaches honors physical science and IB Physics at Minnetonka High School in Minnetonka, Minnesota. He is passionate about making science fun and spends much of his time writing science song parodies and reworking lessons to be in the form of escape rooms or murder mysteries. Joe shares thoughts and lesson ideas on his blog passionatelycurioussci.weebly.com. Reach him at joe.cossette@knowlesteachers.org.

From "Strikes" to "Collective Action": Reflections on a Changing Mindset

Matt Sakow

> **I swore to my friends that I would never join a union. I swore to myself I would never participate in a teachers' strike—and now I've done both.**

I love my local Revive Coffee stand. When it's early in the morning and it's not too busy, I'll stop by the drive-in, grab my Americano (with just a liiiiiitle bit of heavy cream) and chat about good restaurants or some of the math the barista's daughter is working on in fourth grade this year. I happened to stop by the day before our school district's classified staff were anticipated to announce a strike.

"It will be so nice!" the barista exclaimed. "You'll have a long weekend!"

I laughed. The teachers had already gone through a strike at the beginning of the school year, and it had required an incredible amount of work. The work simply looked much different than that in the classroom. As I pulled away from the coffee stand, I remember smiling, knowing that I would be back on the line with my colleagues once more.

I haven't always been so accepting of strikes in education. I've always tended to be quite opinionated, and I'd long had the privilege of feeling like I'd never need to engage in such nonsense. How could refusing to work enact change? To me, strikes were akin to suspending a student for excessive absenteeism. It just didn't feel right.

But at some point, something changed. Many of the beliefs I'd held growing up have been challenged or even completely reversed; however, it has been an enduring, ongoing, difficult process. After participating in my own strike and preparing for another just this past year, I've had ample opportunity to reflect on just how my attitude towards strikes and protests has changed. In college, I swore to my friends that I would never join a union. I swore to myself I would never participate in a teachers' strike—and now I've done both.

I admit with some sadness that I truly began to open my mind to differing perspectives only once I had left the United States entirely. When I put myself in a situation where I was forced to confront my own lack of understanding, I had to come clean with myself about what I really knew and who I was.

Six years before I joined my own high school's picket line, I was experiencing another school's protest from a much different perspective. I was a Peace Corps volunteer in Niangoloko, a town in the West African country of Burkina Faso and a teacher at one of the public high schools, the Lycee Santa. It had been a complicated day, as the students were once again on strike. They called for the school day to end around noon and, as I grabbed my bike and pedaled off, I was lost in thought.

Soon, I noticed how hard it was navigating through all the kids leaving school. My pedals were catching on students' pant legs, my arms knocked by backpacks and shoulders. As I looked up from the bike, I realized: I was in the middle of the students' demonstration. The

first real demonstration I had seen here. This was not the afternoon traffic; these students were on the march and I was right in the thick of it.

My time teaching math in Niangoloko was mostly characterized by this series of strikes and protests with me bearing witness to the apparent chaos around me. The constant disruptions meant that I ultimately taught less than 70% of the school year! But as my two years came to an end and I prepared to return back to the United States, I could see how much had changed at Santa, with the demonstrators ultimately achieving many of their goals. I could hear the hum of the ceiling fans in the eighth grade wing, see the flicker of lights through the slats of a sixth grade classroom window as a distracted student flipped the shutters up and down. The heavy blue door to the computer lab flung open, slamming against a wall as the student council struck the courtyard gong to signal the end of the day. The circle of teachers surrounding the mango tree and making the afternoon tea was a bit bigger than before, with several extra teachers having been reassigned to our school to bolster our short staff. My first year teaching here had looked quite different! Fighting corruption and speaking with the department of education had resulted in some rapid and significant changes to the experiences my students would have in their high school career.

As fascinating as it was to experience this transformation in Niangoloko, I was still an outsider. I was an American, planning on leaving after my two years. Furthermore, I was forbidden by my country office to participate in any demonstrations or strike-related events. Thus, I was doomed to be an observer, separated from the true emotions and consequences of the strikes.

Truthfully, I ended up not quite understanding the methods the people had used in their demonstrations. However, what I saw did turn my mind back to the United States. Many of the problems the Burkinabé faced, I realized, we faced back home as well. Whether it was underfunded schools, crowded classrooms, or wealth or racial inequality—the same problems simply manifested differently across the two contexts.

When I returned to the States, I watched from abroad as the Burkinabé women led a movement that ultimately deposed the country's president in three days and cleaned up the streets on the fourth! This was not surprising to me. After all, Burkina Faso has a rich history of accomplishing the seemingly impossible. After the country's political revolution in the 1980s, the people launched massive vaccination and anti-desertification campaigns, built railroads, and made their landlocked nation self-sustaining agriculturally within three years.

I started to believe that anything might be possible, as long as the people worked together.

As I reacclimated to my new life in the United States, I wondered what "working together" might look like for me. I did not have to wait long to find out. While I was a graduate student and research assistant at the University of Missouri, the university announced the day before our health care was set to be renewed that they would no longer be providing it.

We were workers, the university calmly explained, but we were not employees. How could this be? I heard the story of the grad student in the hospital, about to give birth, but told she would have to pay for the entire delivery. I learned of the parents who would not be able to afford childcare as they sought their degrees. And for perhaps the first time something clicked.

So I put on a red shirt. I borrowed other peoples' signs. The grad students banded together for a multi-year fight for the right to unionize and be truly seen and acknowledged by administration. My program ended and I left Missouri before the students finally won the right to unionize.

These experiences in Missouri and Burkina stayed with me as I reacclimated once more, this time to a new town in Washington State. I landed a job teaching math just in time for the wave of teacher strikes spreading across West Virginia, Arizona, North Carolina and other states in 2018.

I had seen the positive outcomes of strikes and protests in the past, but in some ways I still felt somewhat disconnected from these movements. However, the engagement in collective action as a teacher in 2018 was incredibly meaningful. Not only was I recommitted to remaining at my school and in my community, but the experience changed my interactions and work with my colleagues and my students.

So here we sat the day before school started in our pre-service staff meeting, doing our best to pretend everything was okay and that we'd begin the school year on time. Would the school district end up withholding the raise intended for us by the state government? Would our class sizes be increased?

Then we got the announcement; everyone's phones buzzing in apropos unison. It was time.

It was on Friday, the third day of our strike, that every school came together to rally in front of the district office. The call rang out, "Strike your face off!" and was met by the even more mirthful and raucous response, "STRIKE YOUR FACE OFF." A parent, furious with the disturbing actions of the school board at a meeting she attended, had told the local paper she hoped the teachers would "strike their faces off." And so we gave thumbs-up to the kids across the street who had joined in with the chant and then laughed at the puzzled stares from the cluster of elementary teachers marching alongside us. By raising our voices alongside the interviewed parent, we had found a small way to remind the district that the teachers, parents, students, and community were marching as one.

And truly we were! One of our teachers, seven months pregnant, was walking right along with us, near another teacher with her baby in a sling. This was no small feat; my school lies along a hill, and we found ourselves marching 10 miles a day up and down the pavement.

In spite of this, our staff buzzed with new energy. There was movement to direct, messages to craft, outreach to do, signs to be made!

We were also engaged in incredible conversation—finding ourselves interacting with colleagues across the school whom we'd never see otherwise. We debated the purpose of mathematics and how we might punt some projects back and forth with the science classes. An English teacher and I discussed the similarities between argumentative essays and geometric proofs and planned how we might collaborate, building proofs through a series of revisions. During the marching and the breaks we took in the different teams we formed, we began to discover just how much was similar across our various contents! This resulted in an enormous change in both my school and my own approach to teaching and working as a member of my community this year. We began collaborating more. We began going to each other more for advice or reaching out or sticking up for each other. Our building buzzed with renewed energy which has yet to fade.

It's interesting how our collective work mirrored how I wished to work with students as a teacher. What a rich experience it would be for students to experience the myriad of connections between English and science or history and mathematics! As a school, we've discussed how to connect our curricula in previous years but it seemed like a very distant, near unattainable thing. After this experience, it not only seems more likely, but inevitable. I'm truly excited for what's to come.

> " *I've seen that acting collectively, not as one voice but as a multitude in harmony, can inspire immense change."*

Before the strike began, I had been thinking about where I might end up teaching one day. But through the laughter and rage and sweat and smiles, I realized that I may have finished my travels. I was truly a part of this community.

I recognize that we are privileged to have succeeded in our efforts. Yes, we ended up getting a raise and kept our class sizes consistent, but there is always work to do to improve conditions for both teachers and students. Personally, I feel more emboldened to speak up, to act, and to work together to change those conditions.

And, while this has been frightening for me at times, I feel encouraged knowing I'm not alone. I've seen that acting collectively, not as one voice but as a multitude in harmony, can inspire immense change. After all, it changed me.

Citation

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Matthew Sakow,
a 2016 Knowles Teaching Fellow, is an East Coast native in his third year of teaching in Vancouver, Washington. He has taught algebra, geometry and the AVID elective. In his spare time, Matt has been exploring the Pacific Northwest and singing with his staff band. Reach Matt at matt.sakow@knowlesteachers.org.

Shifting Perspectives of Success

Ian Caldwell, Heidi Park, and Sarah Spector

Three teachers reflect on what Critical Friends work has taught them about engaging in inquiry, collaboration, and leadership.

Acronyms and Terms

- CFG: Critical Friends Group
  - » A Critical Friends Group® community represents a basic unit of support for educators engaged in improving school culture and increasing student achievement.
- Protocol:
  - » Structured processes or guidelines to promote meaningful and efficient communication, problem solving, and learning. Protocols used within a group that shares common values permit an honest, deeply meaningful, and often intimate type of conversation which people are not in the habit of having, building the skills and culture needed for successful collaboration.
- NSRF: National School Reform Faculty
  - » NSRF develops the CFG program as well as protocols for educational spaces.
  - » Learn more at www.nsrfharmony.org.

Note: Many definitions can be found in the glossary on the NSRF site (NSRF, 2019).

Introduction

As often as teaching is portrayed as a solitary endeavor, those who work as teachers know that a wide range of collaborative relationships are necessary.

In our work with the Knowles Teacher Initiative, we've developed ways to collaborate with Teaching Fellows who don't usually work in the same state as us, let alone the same school. Adapting those strategies to collaborate with the colleagues we see daily and face-to-face, however, can be difficult and daunting. So, in July 2017, a group of 15 teachers from all over the country came together to participate in the Critical Friends Group (CFG) New Coaches Training, facilitated by the National School Reform Faculty (NSRF) and sponsored by Knowles.

We wanted tools to facilitate conversations and collaborations among our colleagues in our individual school settings and, after the training, everyone was excited about the possibility of using the protocols we practiced to effect changes in our own schools. Yet over the course of the year, many of us felt that we weren't successful in using the tools from this training. This left us wondering: how do we define success? What counts as being successful?

Knowles Senior Fellows are eligible to receive grants from Knowles for Seed Projects—initiatives that are designed to improve education beyond a Senior Fellow's own classroom, including initiatives that enhance science and math teaching and learning in high schools, build a network of teachers engaged in exploring new ideas, and provide leadership for schools or districts.

Thanks to a Seed Project Grant, most of our group was able to come back together during July 2018 to reflect on our work from the previous year and prepare for the next. As a part of this meeting, we reflected on our individual successes, shared those successes with each other, and considered what we saw and heard from each other. Here, three of us share our thoughts on what success in collaboration can look like and what it means to us.

Heidi: When is it enough?

Collaborating with colleagues can be challenging and messy; in some ways, it's more freeing and faster to work alone. However, with the right level of trust and good communication, collaboration pushes and challenges my assumptions and makes me a better teacher. I wanted tools to transform the collaborative groups at my school into places where we could reflect more deeply about our teaching practice and support each other in our growth as teachers. The 2017 CFG training gave me great ideas for how to structure collaboration with my colleagues and energized my desire to talk more deeply about teaching and learning with them.

But the idea of starting a full-fledged CFG group was still intimidating, to say the least. While there was some initial enthusiasm among my colleagues about bringing the CFG training to our own school, it didn't transform into action. The already-overextended nature of our teaching schedules made me feel like I would be asking my colleagues to put yet another thing on their plates. At the end of the school year, I felt like I hadn't used the CFG training or even really discussed the nature of collaboration with my colleagues.

It wasn't until our July 2018 meeting that I realized that I did have successes, even if they seemed too small to acknowledge at the time. I modified protocols to use with my colleagues, which gave us the space to acknowledge our lives outside of the course team (and outside of school). This helped us better understand one another, rather than jumping to conclusions. Our department used protocols to refine tasks and examine student work as we worked on vertical alignment. At the end of the year, my colleagues acknowledged that they found the process to be valuable, even though at the time I felt that we hadn't made much progress on our goal. I also ran a protocol with the other 11th-grade homeroom teachers to reflect on a year with our new homeroom structure, which had felt like a flop. But, when our group of teachers used the reflection protocol to put together all of our "small" successes, it was clear we had accomplished more than we had thought.

So this made me wonder: why had I felt that my year after the CFG training was unsuccessful, or rather, not successful enough? A fellow CFG coach reminded

> " *When our group of teachers used the reflection protocol to put together all of our 'small' successes, it was clear we had accomplished more than we had thought."*

me that the work that we do in our schools, outside our classrooms, is in addition to our job as teachers. Because of this, we should view any progress we make in those arenas as successes. Although there were many things I didn't do, there were still successes. The school year was not a "waste" of my initial CFG training, as I had initially feared, and I'm finding it's worthwhile to celebrate the small successes and keep moving the work forward.

Ian: Empowering a colleague

In the fall of 2017, I stepped into the role of mathematics department lead for a two-year rotating position, which administration hoped would make our department stronger and more robust. I had some experience as a leader in a previous school, and I had just completed the CFG training, so it made sense for me to be the first to rotate into the position. I used some of the CFG techniques I had learned in planning and running my department's meetings, but the instance that strikes me as one of my greatest successes was a moment for which I wasn't present.

My principal, Mrs. Julia Gillingham, asked me to support the school's leadership team to brainstorm ideas for the future. I had previously told her about my experience with the CFG training, and she was curious about our use of NSRF's "Futures" protocol (NSRF, 2014). She and the leadership team had some ideas about ways to improve the school, but they were still in the brainstorming stage and the Futures protocol is designed to provide structure for brainstorming in a large group.

When I sat down with my principal for the pre-conference meeting, I carefully planned out what we would discuss. We worked through how the Futures

protocol would run, brainstorming and discussing potential barriers and a few agreements that would be necessary for the protocol to run smoothly. Then as the originally scheduled meeting time approached, something came up for the leadership team and the Futures protocol had to be postponed. When it was eventually rescheduled, I was committed to attending a conference out of town, so I could not facilitate the protocol. I was disappointed!

We decided to have my math colleague, Mr. Rick Alvarez, facilitate the Futures protocol with the leadership team. He had never facilitated a protocol, but he had some experience as a participant in department meetings. I met with Mr. Alvarez twice to coach him on how to present the protocol to the participants and how to establish the agreements. We also explored strategies for making sure the agreements were followed. We discussed what to do if the group diverged from the protocol and how to monitor equity of voice.

Mr. Alvarez was understandably nervous about leading this protocol for a group of people who were in positions of authority. I stressed the importance of his role as the protector of my principal's needs, and we reviewed those needs. Emphasizing that he was there to support our principal helped Mr. Alvarez gain comfort with the idea of leading this protocol.

Although I did not see the results of the protocol or receive any details of the meeting, when I followed up, both Mr. Alvarez and Ms. Gillingham told me they were pleased with how it went. While having the leadership engage in a protocol was nice, the reason I consider this such a success is how it impacted Mr. Alvarez. I'm in my last semester as the math department lead, and Mr. Alvarez is set to take my place next year. Though he is anxious, he is excited. He has plans and ideas for leading the department. We talk about the responsibilities for the position. The one thing that has not come up since the implementation of the Futures protocol is Mr. Alvarez's worries about leading a group discussion. He knows that with preparation, he can lead a group successfully. The real success is how my own experience with CFG training changed and empowered another teacher.

Sarah: Trusting in the process

I came to the CFG New Coaches Training at the end of my first year of teaching with the goal of gaining more confidence in participating in and facilitating protocol-driven discussion. The Critical Friends framework I learned about in my first year of the Knowles Fellowship resonated with me, and I wanted to share the idea with colleagues at school. I thought that success would be starting and sustaining a collaborative inquiry group in

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my school and delving deep into problems of practice with my colleagues.

However, there have been many changes in my professional context. I'm now in my third year of teaching, and I'm at a new school. I am not the facilitator of a Critical Friends group. Despite these changes, I have continued to draw value from what I learned and have pushed myself to think creatively about where I can use those skills. By continuing to engage in Critical Friends work, I have gained a broader understanding of what it means to engage in inquiry, collaborate, and lead.

Through the training, I refined my language of collaboration, which gave me confidence in my new professional setting. I learned the difference between questioning to learn, suggestions in the form of questions, and questions that push thinking forward. This work has emphasized the value of paraphrasing to demonstrate listening and hearing. In my new school, where we are working as a faculty to implement the International Baccalaureate Middle Years Program, I lean on these skills each month as we work through our curriculum design.

My classroom has also been a place where I can practice the skills of facilitation while teaching my students to become powerful communicators. Setting agreements together helps my students take ownership in our classroom, and discussion protocols help me

shift from teacher-centered talk to more student-driven discussions. By using protocols with my students, I have continued to grow as a facilitator and become more mindful of equity of voice and access for all of my students.

Because I'm not facilitating a CFG at my school, I was challenged to think of other ways that I could apply this framework in my community. I've learned that being vulnerable is a powerful form of collaboration. By sharing my own works-in-progress and challenges of practice, I have been able to engage in collaborative inquiry and demonstrate through my actions that I value collaborative inquiry highly. In my classroom, I've been able to elevate my students' voices and contributions.

In the CFG training, our facilitator told us to trust in the process: we could count on our colleagues to take something valuable from collaborative inquiry work. I have learned to trust the process myself. I do take something valuable from Critical Friends work, regardless of my role.

Conclusion

So what counts as being successful? In many ways, we expect success to look "big"—we need to institute groundbreaking changes in our school settings to be successful. When we see big changes from an outside perspective, we want to know how they were accomplished. What was the one thing that made this change happen? However, from an inside perspective, successes are often initially found in small places.

We teachers are, as Jim Collins writes, trying to "turn the flywheel"—this huge, heavy metal disk—and at the start it's slow and sometimes painful. But if we continue pushing consistently, the wheel starts a self-sustaining rotation. It's all of the little pushes added together that cause a seemingly instantaneous, huge change (Collins, 2019). So if we continue the work, hopefully our flywheel gains momentum and keeps going.

Were we successful in the ways we intended when we left our training in the summer of 2017? Not exactly. None of us are yet at the point where collaborative groups in our schools are self-sustaining or where the entire culture around collaboration at our schools has shifted. But in taking a closer look at the work we've been doing, we've realized that we are doing the work we set out to do. We are facilitating conversations and collaborations among our colleagues in small but meaningful ways. So were we—are we—successful? Most definitely.

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Ian Caldwell
is a Knowles Senior Fellow who teaches mathematics at Arete Preparatory Academy in Gilbert, Arizona. He also coaches the juggling club and is the lead math teacher. Reach Ian at ian.caldwell@ knowlesteachers.org.

Heidi Park
is a Knowles Senior Fellow who teaches physics and chemistry at Jones College Prep High School in Chicago, Illinois. She also coaches the Scholastic Bowl team and mentors new teachers in the district as a Framework Specialist. Reach Heidi at heidi.park@ knowlesteachers.org.

Sarah Spector
is a 2016 Knowles Teaching Fellow who teaches biology and Earth science at Harrison High School in Westchester County, New York. She likes thinking about how to bring the outdoors into her classroom. Reach Sarah at sarah.spector@knowlesteachers.org.

Pressing Pause

Rebecca Van Tassell

My reflection on my choice to press pause on my career to focus on being a parent.

My alarm goes off at 4:30 and I sneak out of bed so as not to wake my spouse, Josh, who won't need to wake up for hours. I forgot to set the timer on the coffee pot last night, so I clumsily get the coffee started and lean against the counter, half asleep, while it gurgles away. By the time I've drank enough coffee for my brain to start working, it's 5:10. How does that happen!? So much for the shower I had planned. I get dressed, pack my lunch and leave to meet my carpool by 5:30 for our hour-long commute.

After teaching four blocks of painstakingly planned lessons which nevertheless flop worse than a dying fish, I realize the reason I'm dancing like a fool while trying to give kids after-school help is because I haven't gone to the bathroom since I woke up this morning, since I spent my only free moments eating my lunch while standing at my computer answering emails. I stay at school, working with students and occasionally other teachers, until 5:30 or so, when I begin the long ride home.

I'd repeat this daily pattern, with weekends of grading and planning, for two years. It got better in my third year, and by then I thought to myself "I've got this teaching thing down, I'm ready to start my family!"

I decided to stay in the classroom for the first year of parenting and see how it would go. We were strategic in our preparation for expanding our family: we moved closer to our families and my work. At the time, my spouse was finishing his doctorate degree and teaching part time, so we could balance our work with taking care of our child. Josh would take on the role of primary caregiver, while I remained the primary breadwinner. Staying in the classroom was the best choice for our family financially. That we even had the choice, I recognize, is a privilege. We could have made it work if I'd really wanted to stay home, but we thought, at the time, it would be more stressful than me being at work.

We managed to time the birth of our son in the spring so that I could take my six-week leave, then just have to work a few short weeks at the end of the school year before summer break, effectively lengthening my leave from six weeks to four months of leave. While I was experiencing another intense period of learning and growth, that first summer with my son was an incredible delight. We were captivated by this tiny human who was growing and changing so quickly. He smiled so readily with his dimples and half-moon eyes. We watched him transform from a tiny baby to an interactive little person who loved to smile and laugh with us.

I returned to the classroom in the fall because I wanted to stick with my profession. I was exploring my new identity as a teacher leader and was excited by the leadership opportunities I had at my school. I had supportive colleagues who collaborated well and who challenged me to improve my practice. I didn't want to let go of such a wonderful job. I also didn't want to step out, knowing that the time I took off would impact my

earnings for my entire career. But it was so hard to leave my son that fall, and some big part of me was worried I was making the wrong choice.

I felt truly conflicted. I didn't want to let go of the satisfaction and joy I got from being in the classroom and worried I wouldn't find that same satisfaction in "simply parenting." I knew it would be tough but valuable work, but I thought others wouldn't see it that way. They'd see me as giving up, as not resilient enough to mother and teach at the same time—or that I'd be making a selfish choice, a choice that implicitly judged the choices of women who chose to work.

I realize now I had deeply internalized the societal messaging that teaching as a new parent was something I should be capable of and that to stay home would be an admission of weakness, an inability to cope and balance my life. At the same time, I was worried about the stigma of being a stay-at-home mom. I knew the skills and smarts necessary for the work because I've watched my own mother make it happen. I knew that the work of a primary caregiver is demanding, complex and often difficult work, made worse by the lack of value we culturally ascribe to caregiving. So I'm ashamed that, up until recently, I participated in that lack of appreciation for what it takes to keep a family going.

I dearly love my female friends who work, and had colleagues at my school who had babies and young kids at home. They were all doing it—working and mothering—so why shouldn't I be able to?

So I chose to stay in the classroom. I didn't have a model for what it looked like to maintain a professional identity while pressing pause on a career. I felt that to choose the role of primary caregiver meant I was abandoning this important and essential part of who I was. The only models of stay-at-home mothers I had were people who had given themselves over entirely to that identity, who had given up their professions even if they'd had intentions of returning.

As it turned out, though, that year we'd planned so carefully was tough. Really tough. I constantly felt like a bad mother and a bad teacher. I would come home every afternoon and fall asleep with my son during his afternoon nap, wake up long enough to eat dinner, play with my son, do our bedtime routine, and fall asleep again. In my classroom, I was still prioritizing making changes to my curriculum and trying new things to improve my practice, but I was not doing it well, or I thought I wasn't doing it well. As early as October, I felt like I'd made the wrong choice.

As the year progressed, I also began to struggle with my mental health. At the time, I knew I was unhappy; I was

exhausted all the time and often felt overwhelmed by my son and his needs. It is only in retrospect that I see how I just hunkered down and tried to push myself through instead of reaching out for help. I didn't admit to myself how bad things were—I think because it would have made it more difficult to keep going.

My spouse had finished his PhD in December of that year, and I remember the exact place I was when he got the job offer that meant I could resign from my position. We were visiting friends back in Indiana over spring break in April; my son had turned one just two weeks before. I was standing in the living room when my husbands' phone rang with an unfamiliar number. In the job game, they only call with good news—bad news comes in the mail. The relief I experienced after this was the first sign that I should have made a change sooner. That night, as my son yelped along to the music of my husband's dissertation performance by the symphony orchestra at Indiana University Bloomington, I felt pure elation.

My choice to leave the classroom in that moment was incredibly easy. I was miserable, and having an end in sight changed everything. But I still felt this huge sense of loss when the fall came around and I didn't return to work. I had all the usual back-to-school nightmares, but I didn't go back. I missed working, thinking about my teaching, collaborating with other teachers, and interacting with my students.

Part of that sense of loss was that I didn't feel

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> *It is the right amount of work for me, for now, that meets my needs professionally and personally."*

immediately like a great mother. Spending all day with an 18-month-old is always exhausting, often frustrating, and only sometimes magical. My son also despised being in the car, so, even though we were closer to family, I still felt isolated. Even now, six years into this parenting gig, there are days I don't feel like a good mother, and it took time before I felt at peace with my choice to leave.

But for me, it was the right choice. Because it was about me. This wasn't about the best way to be a parent, or wanting to give my children an idyllic childhood with constant access to a parent. I had finally given myself permission to prioritize my well-being, even as a new mother who was drawn to prioritizing my child's needs above my own.

I knew I wanted to keep teaching, so I did things to stay connected. I took advantage of opportunities through the Knowles Teacher Initiative, like serving as a reviewer for Knowles Teacher Initiative Summer Meeting proposals. I found things like my work with *Kaleidoscope*, which allows me to do asynchronous, flexible work that keeps me connected to other teachers. Now that my kids are a bit older, I'm teaching part-time as a college instructor. While it isn't high school, and I am still working toward being back in a full-time high school position, it is the right amount of work for me, for now, that meets my needs professionally and personally.

Part of why I went into education in the first place was because I knew it would complement my plans for having a family. Making the choice to leave was difficult, but I'm glad I did. I wish I had made the decision sooner, rather than let my determination to follow the model I had dictate my choices. I wish I'd had a model of someone like me, who wanted to maintain their professional identity while adding the identity of parent.

I write this in the hope that others can make choices for themselves without feeling as much of the guilt and feelings of inadequacy I felt. I'm still a teacher and a

teacher leader and I'm coming back, but I've taken some time to nurture a new part of who I am.

Citation

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Becky Van Tassell, a Knowles Senior Fellow, is a biology and environmental science teacher who is currently teaching in the environmental studies program at the University of Pittsburgh at Bradford. She is also an editor-in-chief of Kaleidoscope: Educator Voices and Perspectives. She believes passionately in the empowerment of teacher voices and loves her work with teacher writers. Reach Becky at *rebecca. vantassell@knowlesteachers.org*.

ABOUT *KALEIDOSCOPE: EDUCATOR VOICES AND PERSPECTIVES*

In December 2014, the Knowles Teacher Initiative published the inaugural issue of its new journal— *Kaleidoscope: Educator Voices and Perspectives*. Through Kaleidoscope, Knowles shares stories from teachers about teaching, leading and learning.

Kaleidoscope strives to provide readers and writers a public space for discourse and dialogue about the knowledge and expertise of teachers and the complexity of our profession. We believe that teachers are well-positioned to improve education in their classrooms and beyond, and we know the power that storytelling and knowledge sharing can hold in the process of transforming educational outcomes for students.

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