



HOLA:

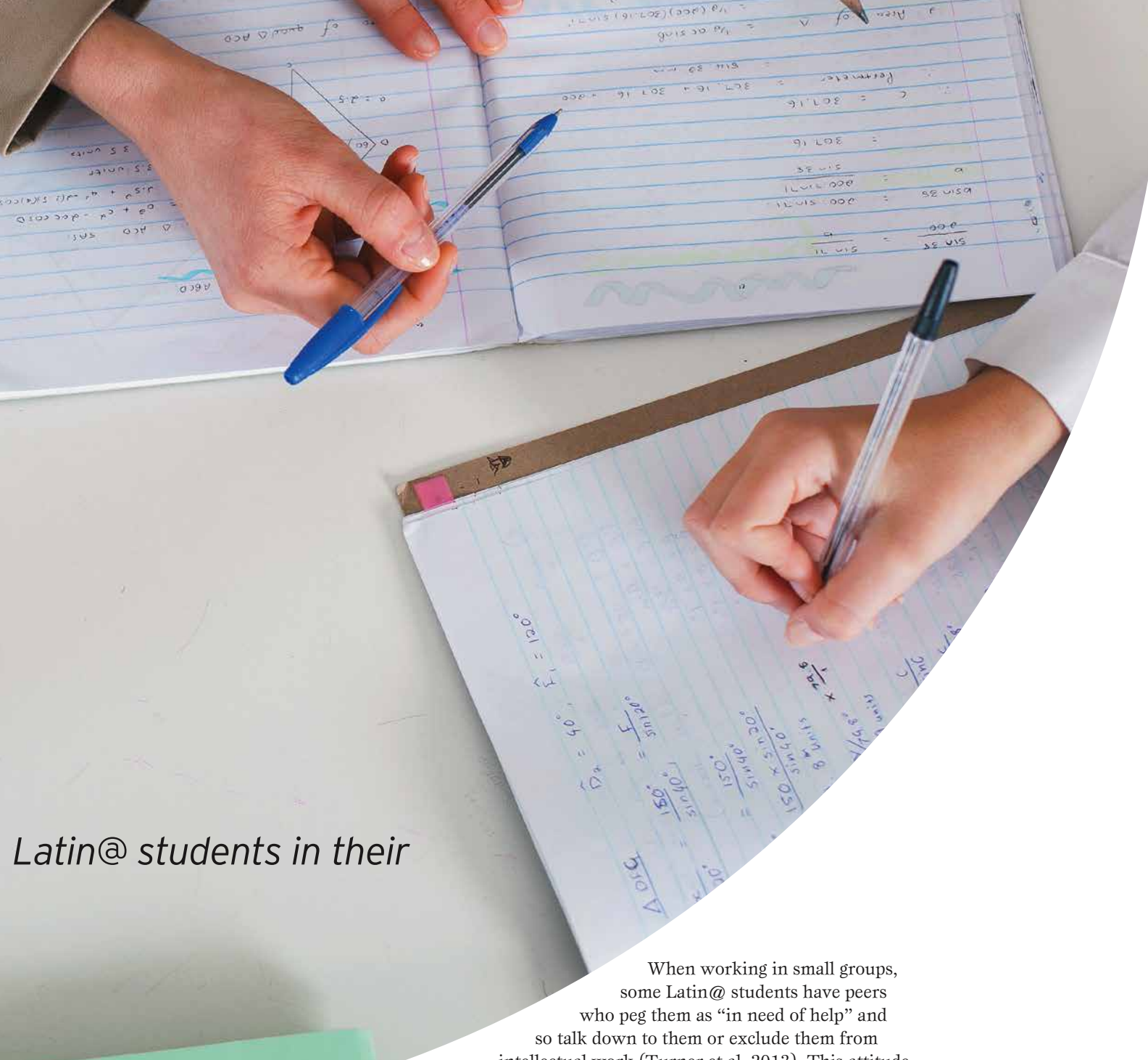
Hunt for Opportunities-Learn-Act

Rochelle Gutiérrez

Suggestions for listening to everyday interactions.

Most mathematics teachers know that students can be a great source for understanding what they need as thinkers, group members, mathematics learners, and future citizens. Thus, listening to students is an important teacher practice. But listening takes time, something that not all teachers feel that they have. And many attempts to listen to students can fall short, especially with respect to students who have been historically marginalized in society. Sometimes differences in communication style, body language, or speech patterns can cause a teacher's attempts to "reach out" appear superficial or disingenuous (i.e., as if we are hearing only what we want to hear) to Latin@ students. (By Latin@, I mean both Latina and Latino students; I write the term with the @ symbol also to indicate my solidarity with people who identify as LGBTQ.)

Students who are Latin@ may hear themselves reduced to code words such as "achievement gap," a situation likely to worsen with Common Core State Standards assessments that have been evaluated as more difficult for all students (Gewertz 2014). They may look around and see that no students like them are in the advanced or honors courses, the high-performing groups, or on the math team (Flores 2007). They may have watched their parents attend school meetings or conferences where teachers or administrators dismissed or misunderstood the messages that their families were saying.



Latin@ students in their

Within mathematics in particular, Latin@ students must manage negative stereotypes or deficit views that teachers and other students may hold of them (González, Blanton, and Williams 2002; McGee and Martin 2011). In class, they may have a question but silence themselves, fearing others will see them as dumb and representative of their race. Or they may take more time to give a response, not because they do not understand but because they are first processing their thoughts in another language or trying to make sense of the social or classroom codes in school (Moschkovich 2002; Zevenbergen 2000).

When working in small groups, some Latin@ students have peers who peg them as “in need of help” and so talk down to them or exclude them from intellectual work (Turner et al. 2013). This attitude can be puzzling to recent immigrants who have been exposed to a more rigorous mathematics curriculum than the one presented in the United States (Gutiérrez 2009). In such cases, these students may need to jockey for position to be taken seriously or to be seen as leaders. Often, the additional emotional and cognitive work that is needed to negotiate their place in the classroom can be exhausting to students but invisible to teachers.

Creating an inclusive classroom community requires knowing where and how to listen to particular kinds of students. The suggestions in this article are based on my previous work as a middle and high school mathematics teacher of Latin@ students in East San Jose, California, as well as lessons

I have learned during the past twenty-two years while researching effective mathematics teachers of Latin@ students in the United States and one year studying mathematics instruction in grades 7–9 in Mexico while on a Fulbright scholarship. In this article, I argue that every interaction should begin with HOLA: Hunt for Opportunities–Learn–Act.

WHAT DOES IT MEAN TO LISTEN?

Listening means hearing students—being open to their ideas and their experiences in the classroom. Two important points are worth emphasizing:

1. Students need to know that we are listening to them—not to last year’s students, not to their classmates who may look or talk like them, not to students from other sections of the same course.
2. Part of listening to students is also hearing what they do *not* say. We must read between the lines and recognize that our students’ lived experiences may be very different from ours and that bridging the gap may require some effort.

When we think about what we know about our students, we need to consider the source. Is our information from students, colleagues, media, or families? If so, which students, colleagues, media, and families? Not every source is reliable for our approach to teaching. We sometimes have images of our students and act on those. An example is reflected in this attitude: “My students go home and have to watch over their younger siblings because their parents work two jobs, so I don’t assign homework.” Although many working class parents work long hours and young students are sometimes required to take on greater responsibilities in the home, those situations may not be the same for your particular students. Or they may be the same, but if we listen closely, students may also communicate that they can still accomplish their homework, especially if completing a more rigorous curriculum will help them go to college.

It is important to continue to ask ourselves this question: In what ways do I challenge what I think I already know about the Latin@ students whom I teach?

LATIN@ IDENTITIES IN THE CLASSROOM

All teaching is identity work, regardless of whether we think about it in that way. We are constantly contributing to the identities that students construct for themselves, with the goal of developing the “productive dispositions” called for by the Common Core State Standards for Mathematics (CCSSI 2010, p. 6). As teachers, we are also reproducing what mathematics is and whether students

can relate to doing it. Student identity in relation to mathematics is different from that in relation to other subjects because mathematical ability is seen as a proxy for intelligence in society. When our students do not feel that they are mathematical, there can be lasting consequences for them beyond how well they do in school or whether or not they continue on to a STEM-based career. As such, we need to listen to the whole student—mind and body.

Listening to minds means paying attention to how students are processing mathematical content—whether they are developing conceptual knowledge, whether they can make connections across topics and to the world around them. It also means recognizing that language obstacles, such as reading passages on assessments, can obscure the level of mathematical understanding that a student shows. Listening to bodies involves student identity. Although students need opportunities to learn rigorous mathematical content that will prepare them for college, students should not have to assimilate to be able to participate in the mathematics classroom. This does not mean that every mathematics lesson will be relevant to the life of every student. But it does mean that we need to be consciously providing both windows and mirrors for our students (Gutiérrez 2012). That is, the curriculum and our classrooms should reflect both things that are new to them—windows—that will stretch their minds and bodies as well as things that are affirming—mirrors—that will help them maintain a sense of wholeness while in the classroom.

Hola is a Spanish term for hello. You can think of these three levels of listening as a way of starting a conversation. As teachers, we need to begin with opportunities to listen to students, then reflect on what we have learned, and finally act on what we have heard.

SEIZE THE MOMENT *Hunt for Opportunities*

Some teachers have a great desire to listen to their students but are not sure where to start beyond greeting students at the door. Here are some strategies to try.

Exit Slips

Many teachers limit exit slips to determining mathematical understanding, but they can also be used for feedback on your teaching, for the socio-emotional work that students feel that they have to do in your classroom, for how groups are functioning, and so on. These can be created on paper, or they can be electronic (one online site that caters to teachers is exitticket.org).

Group Work

Many teachers circulate and listen to small groups as they work. Like exit slips, group work is a good opportunity to listen not just for mathematical understanding but also for who is being cast as an expert, who is doing the intellectual work, who becomes a spokesperson, or who gets credit.

Listen also for the language that students use. Many Latin@ students are bilingual to varying degrees. Some have spent some time in another country, learning mathematics in Spanish, and so are comfortable working exclusively in Spanish on problems with other students who are fluent. Other students speak Spanish at home with their families or friends but know few or no mathematical terms and may choose to “code switch” (move back and forth between English and Spanish, sometimes in midsentence) when working on problems. Still others may speak no Spanish at all. As you move around your classroom, pay attention to which students use Spanish, under what conditions, and for what purposes. These observations can help you form effective groups that support your students in using Spanish in a way that is meaningful for them.

Surveys

The beginning of the school year or semester is a good time to get students to share their perceptions of mathematics, their preferred learning styles, their hobbies outside school, and their expectations of you as a teacher. Ask students to finish statements such as these:

If mathematics were a form of weather, it would be _____ because . . .

One thing that teachers fail to understand about students like me is . . .

The last time that I felt really good about a math problem was when . . .

Or have students draw a pie chart of their identity, labeling each section with titles and illustrations of different parts that contribute to their identity—for example, soccer player, son, artist, church member, friend.

You can use information from these surveys over the course of a semester to highlight one student each week and have others guess who it is. Knowing one another helps students listen to one another.

Go-Stop-Start Sheets

Similar to exit slips, these are a shorthand way of having students give feedback on many aspects of their classroom experience. Offer students a slip of paper with a green light, a red light, and a stop sign (or simply the words *go, stop, start*) for them to fill

in. *Go* means “keep doing this in class”; *stop* identifies an aspect of class that is not working for them; *start* allows them to make a suggestion of something new to include in class.

Journals and Learning Logs

Students can be asked to keep track of not only their understanding of mathematical concepts but also how they learn and what they need or how they feel when they are doing mathematics. McIntosh and Draper (2001) discuss a version of learning logs that can be adapted for this purpose. You may choose to read these journals regularly or have students indicate when they want you to read a particular entry.

Before and after School or Lunch Hour

You must do more than be generally accessible in the classroom; you must invite individual students to spend time with you there. Be specific about when you want them to join you and follow up if they do not show.

Community and School Events

Attending students’ extracurricular activities is a sign of wanting to know students as whole people, not just mathematical minds. Such activities also give you a chance to meet family members and appreciate students’ talents outside mathematics.

Steering Committees

Steering committees are another way to learn from your Latin@ students. These committees consist of one to two student representatives from each class who meet with the teacher at lunch or after school regularly to provide feedback on how the class is functioning. Student representatives from steering committees can be given time during class to hold “class meetings” where all students can make suggestions that the class representative takes back to the teacher. In this way, students can inform the teacher about their perceptions of how the class is run and also hear how peers are experiencing the classroom environment.

These strategies provide many opportunities to listen to Latin@ students. When trying something new, however, focus on only one or two changes at

When you listen to your students, you may be surprised to learn about obstacles to their learning that you had not previously considered.

a time so that you are not overwhelmed. You might pick one new listening strategy and do it consistently with one class before expanding to another class.

Some questions to consider:

- What opportunities do I create that allow me to listen to my students?
- Do I listen to students with a sense of wonder and without judgment, or am I primarily focused on listening to hear if they are on task?
- Do I use the Common Core’s Standards for Mathematical Practice—such as “model with mathematics” (SMP 4, CCSS [2010], p. 7)—to allow my students to inform me about real-world phenomena that are important to them?

HEAR WHAT STUDENTS HAVE TO SAY

Learn

After listening to students, you will have a lot of information to digest, and you will need time to reflect. Ask yourself these questions: How do I feel about what I have learned? Do I feel defensive about my teaching or about other adults in the building? When I listen to my students, do I want to correct their speech, attitudes, or decisions? Or does listening conjure up feelings of empathy, wonder, or further questions?

During my year spent observing mathematics instruction in Mexican classrooms, I learned some interesting things. In those classrooms, the chalkboard or white board is used only at certain times. Teachers organize the mathematics content to be covered in an outline format that begins with a title and roman numerals and continues each day using the same organizational structure. In class, students must listen carefully and copy into their notebooks the information that the teacher dictates. Students are not expected to write in their notebooks until the teacher explicitly instructs them to do so. At other times, while the teacher explains problems, students simply listen and make sense of the mathematics.

Some students whom I met were border crossers; they had spent some time in the United States, either to visit relatives or for longer periods of time when economic situations caused their family to move. They commented on how “confusing” an American classroom appears. For them, it was hard to know what was important and what was not because teach-

ers never tell students when to write and because teachers and other students use the chalkboard or white board as if it were scratch paper (a place to work out problems but not to review at the end of the class to know what was covered). The students I spoke with expressed frustration with the fact that teachers often erased the board without first asking whether students had copied the information down, and some teachers never expected students to keep a formal notebook. For them, many of the obstacles they faced were not ones that we, as teachers, would presume to be problems, such as language barriers. Instead, these students struggled with trying to make sense of unfamiliar classroom practices.

When you listen to your students, you may be surprised to learn about obstacles to their learning that you had not previously considered. You may also become aware of features of your classroom that you take for granted but that provide critical support for your Latin@ students.

SHOW STUDENTS THAT YOU HAVE LISTENED

Act

As teachers, we need to be ready to act on what we have learned so that students feel heard. Most examples of “acting” fall into the category of giving students more voice—more voice in classroom rituals, their learning, or the identities that they are developing with us and through mathematics. Listening to individual students does not benefit only them; it benefits all students in our classrooms.

Steering Committee Action

After students have voiced their perspectives on how the class is working and what improvements they and their classmates suggest, a teacher needs to consider the feedback and decide which suggestions can be implemented fairly quickly. You may not be able to incorporate all the students’ suggestions, but even implementing small ones will go a long way toward helping students feel heard and valued. For example, students may suggest that they want their working groups to change more often.

Forming Student Groups

Listening for who speaks Spanish in your class may be complicated (Gutiérrez 2003). Even when students’ first language is Spanish, they may have transitioned out of any bilingual education support by the time they reach high school. Because the Spanish language is not highly valued in American society, many students who are fluent actually choose not to use it. As a result, you might be surprised to learn that you have Spanish speakers in your class! Knowing that language is one way to express oneself and is tied to identity, you might

Conduct an intake interview with a student who has recently immigrated to the United States.

look for ways to encourage students to use Spanish in class. Acting on your knowledge of who speaks Spanish and with whom might involve creating working groups that place recent immigrant Latin@s with other bilingual students. It is important to continue to check in with your students to see whether these groupings work well.

Algorithms from Other Countries

Teachers who are dedicated to providing voice to Latin@ students' in their classrooms regularly position their students as experts on a variety of things. Many recent immigrant students know algorithms that are different from those we use in the United States.

For example, after multiplying two multidigit numbers, instead of doing the reverse operation (division) to verify the correct result, students in Mexico use a quick algorithm that takes seconds to complete. **Figure 1** is an example of how students in a Mexican classroom show that they have checked their multiplication. A student's work may appear to show that she was not sure how to check her answer and so just crossed it out. Yet students in Mexico can explain that they are summing the digits of the two factors, multiplying them, and then checking the sum of those digits against the sum of the digits of their answer.

In essence, students using this algorithm are converting each multidigit number to its modular form in base ten, a procedure based on "casting out nines," something American students usually do not encounter unless they major in mathematics in college and take a course in number theory. A student can be encouraged to share an algorithm from his home country and become the teacher for the moment. Teachers can also ask further questions and help analyze why the algorithm works so that students in the class can see its value. Teachers also may choose to encourage other students to seek help from the student on future problems like these.

The Cuaderno

Use of the *cuaderno* (mathematics notebook) is another opportunity to give recent immigrant students voice and position them as experts. Taking notes and maintaining a *cuaderno* in mathematics is a very structured and rigorous process for students in Mexico and throughout most of Latin America. The *cuaderno* requires extensive work to maintain and highlights the strict discipline involved in learning mathematics. All students purchase a notebook with prenumbered pages, consisting entirely of grid paper (rather than lined or blank paper), so that drawings can be constructed properly and to scale. Pages are never torn out, so students exercise extra care when writing in their notebooks. Most students use colored

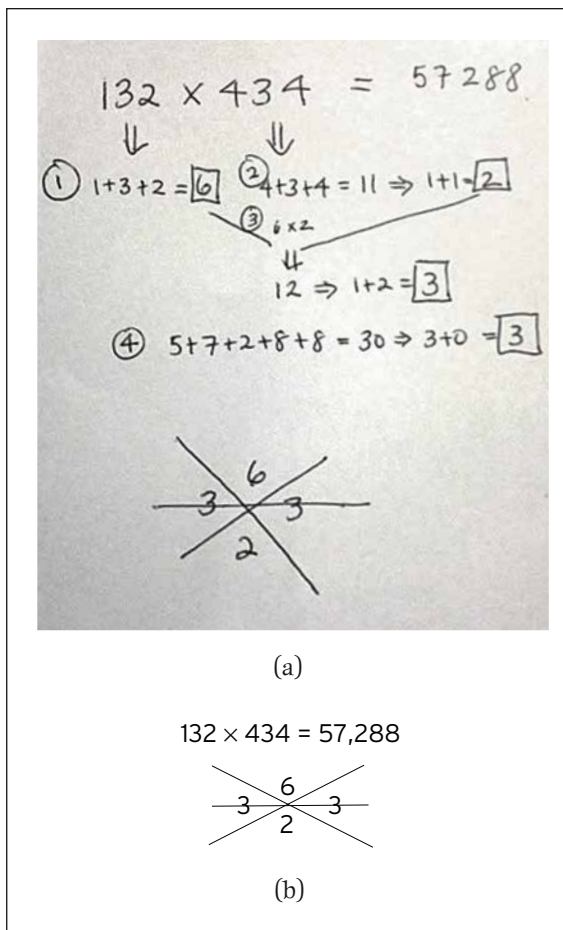


Fig. 1 This is an example of how students in a Mexican classroom show that they have checked their multiplication.

pens for different meanings—black ink for a major topic or theorem, blue ink for examples, red ink for postulates, and so on.

The *cuaderno* not only serves as a place for recording notes, dictation, homework, and tests; students also use it as a regular resource for studying and for solving problems in class. For example, before asking the teacher a question, students are expected to first look in their notebook to see if they can find an answer or a clue about how to solve a problem. Because the *cuaderno* essentially becomes a complete record of one's experiences in mathematics, most students retain these notebooks into their adult years, partly as a sign of pride and also as a resource for future math courses.

With your knowledge of the *cuaderno*, you might choose to conduct an intake interview with a student who has recently immigrated to the United States. Ask the student to show you a notebook that represents the mathematics from his or her home country. You may be surprised to find that the content covered in classrooms in other nations is more rigorous or introduced earlier than that covered in American classrooms. The fact that the *cuaderno* requires

attention to detail and is used in more deliberate ways in Mexican classrooms than in American ones offers an opportunity for recent immigrant Latin@s to be positioned as experts on taking notes and using the notebook as a reference.

Community Projects

Community-based projects can build on the knowledge that students and their communities hold, which may be considered funds of knowledge. These projects can allow students to develop meaningful solutions to obstacles that they face in their everyday lives. Rather than relying on essentialist notions of Latin@ culture, create projects that allow students to choose topics that are meaningful to them.

Social Justice Projects

Projects that involve using mathematics both as a lens to investigate inequities in society

and to convince others to change can be powerful for engaging students as well as learning from them what issues are pertinent to their lives. Teachers can download guidelines and lessons from [radicalmath.org](http://www.radicalmath.org). I have used the Jena 6 lesson (<http://www.nycore.org/newsite/wp-content/uploads/revealingracistroots.pdf>), which involves calculating the likelihood that an all-white jury would happen by chance in a town where 14.4 percent of the citizens are black. In this activity, students can be exposed to mathematics as simple as applying a Monte Carlo model to more sophisticated mathematics that draws on finding the binomial coefficient (“ n choose k ”).

Spoken Word and Raps

These can be modeled with YouTube™ videos, and students can be asked to respond through class discussion, in writing, or in developing their own spoken word or raps. Some teachers have used these as novel ways for students to explain

What evidence do I have that my students feel heard?

a mathematical concept (e.g., <http://www.youtube.com/watch?v=jGJrH49Z2ZA>); other teachers have used them for students to express their definition of education or their experiences in the school system (e.g., <http://www.youtube.com/watch?v=Z1pYjUY9h9U>).

You can provide voice to your students in many ways, some of which involve consistently using strategies that are listed in the Hunt for Opportunities section. You will notice a feedback cycle: Giving students greater voice allows them to be partly in charge of the classroom and will also help you continue to listen to students regularly.

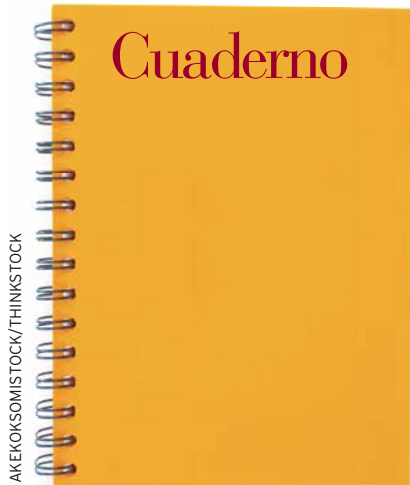
Some questions to consider:

- Do I give my students a chance to be seen as experts on things that they can teach me—about my class, about the school, about doing mathematics, about their needs in learning, about their lives outside school, about other students?
- What evidence do I have that my students feel heard?

Once you practice HOLA regularly, you may want to share with others what you are learning from students. Do not be surprised if you find yourself at a faculty meeting eager to share how your steering committee or exit slips are affecting your classroom. And you should share! You will be modeling to others what it really means to listen to students. Just as in everyday speech, HOLA does not guarantee a rich interaction. However, it is a good first step toward connecting with your Latin@ students and thereby humanizing the mathematics classroom for all.

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