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Inquiry and Global Literature Across Knowledge Systems

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**WOW Stories: Volume IX Issue 1**  
**Inquiry and Global Literature Across Knowledge**  
**Systems Spring 2021**

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## Introduction:

The Worlds of Words community's scholarship and teaching is informed by and situated in inquiry, a framework for organizing curriculum that encompasses the learner's personal and social knowing, knowledge systems, and sign systems (Short, Harste, with Burke, 1996). Inquiry is "a collaborative process of connecting to and reaching beyond current understandings to explore tensions significant to learners" (Short, 2009).

This issue of WOW Stories presents readers with a range of articles that demonstrate how, through engagement with global literature, students and teachers draw upon personal experiences and beliefs, implement information across knowledge systems, such as economics and critical theory, and utilize sign systems including written and spoken languages and mathematics to examine current understandings about themselves and their worlds, expand perspectives, and pose new questions.

The issue begins with two classroom-based studies into language. The first article, "Cosmopolitan Explorations of Culture Through an Intentionally Curated Text Set," is a teacher research study in which J.M. Lopez describes how she initiated an inquiry into students' personal and family cultures through a carefully curated text set that reflected what she learned from administering a home culture survey. Lopez documents students' use of translanguaging in their responses to the texts, as well as what they learned through their reading and discussions. The next article, "Inquiring about Language through Dual Language Picturebooks: A Case Study," describes a collaborative inquiry that explored how a student in an after school global cultures club "engaged with dual language picturebooks to develop language awareness and inquire about how these languages are used in books, her life, and the world around her." Dorea Kleker, Kathy G. Short, and Nicola Daly, through careful observations of and discussions with Safita, illuminate the rich linguistic resources available to children in multilingual communities, as well as their natural curiosity about language and culture as they engage with high quality texts with multilingual representations.

Additionally, this issue includes articles that present readers with rich descriptions of instructional engagements through stories and curricular planning. In the article "Paychecks, Bills, and...Zines?: Exploring Financial Literacy and Systemic Poverty with Eighth Graders," Antonia Moore describes a simulation she created to foster better understandings of economic systems that privilege some, while disadvantaging others. She tells the story of how she constructed the simulations and engaged students in the writing and publication of 'zines to reflect on what they learned through the classroom engagements. Mary L. Fahrenbruck and Leanna Lucero, in their article "Using Math to Better Comprehend Picturebooks," demonstrate that, while picturebooks are more commonly used to teach specific math concepts and skills, math can be utilized to enhance comprehension of stories and illustrations. Their curricular recommendations include lesson objectives, connections to the Common Core math standards, and possible uses for the picturebooks around which they designed these engagements. Lastly, this issue presents readers with the story of a university school collaboration committed to the professional development of teachers and teacher candidates through engagement with linguistically and culturally diverse students and quality multicultural and international texts. In this vignette, titled "Embedded Classrooms, Culturally Sustaining Pedagogy, and Growing Early Childhood Literacy Educators," Julia

López-Robertson, Jennifer D. Morrison, India Grady, Joan Morgan, and DeAnna Savage present examples of instructional engagements across their university/school partnerships and how the onset of the COVID 19 pandemic impacted their work.

This issue also marks my last as co-editor of WOW Stories: Connections from the Classroom. Working with this journal has been nothing short of an honor and privilege, and I want to thank the authors, reviewers, and publication managers for your patience and hard work in making this journal such an important publication for promoting the rich possibilities found in bringing children and adolescents together with global literature. And I want to extend my deep appreciation to Dr. Mary Fahrenbruck, Co-Editor of WOW Stories, the Director of Worlds of Words Dr. Kathy G. Short, and Associate Director of Worlds of Words, Rebecca Ballenger for your guidance, commitment, and belief in my ability to do this work. Thank you all.

Short, K. (2009). Curriculum as inquiry. In S. Carber & S. Davidson, (Eds.). International perspectives on inquiry learning (pp. 11-26). London: John Catt.

Short, K.G., & Harste, J., with Burke, C. (1996). Creating classrooms for authors and inquirers. Portsmouth, NH: Heinemann.

Tracy L. Smiles



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## Cosmopolitan Explorations of Culture Through an Intentionally Curated Text Set

J. M. Lopez

Cosmopolitanism embodies the idea of many people from different cultures existing in the same space who are open to learning about and celebrating each other's unique perspectives, maintaining their individuality, but also embracing connections across cultures (Roudometof, 2005). Hull and Stornaiuolo (2014) suggest that the various cosmopolitan stances students take on include a proximal stance in which students develop an understanding of themselves, a reflexive stance in which students understand the differences between themselves and others, and a reciprocal stance in which they make connections with others across cultures. My goal as a teacher is to facilitate students adopting each of these stances through a cosmopolitan view of the world. One way to accomplish this is through their encounters with literature. Literature, as Rudine Sims Bishop (1990) has stated, can be a mirror, window, or sliding glass door. I want to validate students' diverse experiences by exposing them to texts that show them reflections of themselves as well as experiences different from their own.

Working in a dual language classroom with students who are learning in both Spanish and English and who come from various language backgrounds, I have also sought to promote translanguaging through reading and responding to literature. Translanguaging involves the fluid use of language by bilinguals as they use their full linguistic repertoires to communicate (García & Lin, 2017). Students who are translanguaging may express their thinking in any combination of their languages within the same setting. This complements a cosmopolitan view in recognizing one's languaging as a cultural element and promoting a celebration of multiple cultures through the use of multiple languages. Therefore, inviting students to see how they can be reflected in texts and to promote their interest and understanding of each other's cultures, I chose to curate a text set based on their families' cultural heritages. I was also intentional on how I elicited responses from students that honored their uses of language and promoted translanguaging.

I teach in a suburban school district in the southern United States. Our school district has adopted a two-way dual language model in which the students receive half of their instruction in English and half of their instruction in Spanish. Between the two groups of students enrolled in the third-grade dual language program, there are 37 students, 17 are native Spanish speakers, 18 are native English speakers, 2 are simultaneous bilinguals; 57% are Latinx, 35% are White, and 8% are Black.

### Text Set Curation

To gather information about the students and their families, I created a home culture survey in English and in Spanish. In the survey, I asked the following questions:

1. Do the members of your family (including parents, grandparents, as well as other extended family members) speak various languages? If so, what languages do the members of your family speak?/¿Hablan varios idiomas los miembros de su familia (incluyendo los padres, abuelos y otros miembros de la familia extendida)? ¿Qué idiomas hablan los miembros de su familia?
2. Parents, where are the places you lived or regularly visited as a child?/Padres: ¿Dónde están los lugares donde viviste o visitaste cuando eras niño?
3. Parents, where did your parents live when they were children?/Padres: ¿Dónde vivían tus padres cuando eran niños?
4. How would you describe your family's cultural heritage?/¿Cómo describirías el patrimonio cultural de tu familia?
5. Are there any special ways that your family celebrates specific holidays?/¿Hay alguna forma especial en que su familia celebre días festivos específicos?

From the survey data, I identified various aspects of the students' cultural heritage. I chose to draw from students' cultural heritages in the creation of my text set because I thought they may be able to take on a proximal stance if they were able to see themselves reflected in the texts. They would also see the different cultures of their classmates reflected in the texts, giving them an opportunity to possibly take on reflexive and reciprocal stances as they would be able to see the differences between themselves and others and possibly make connections across their cultures. All of the categories included in the cultural heritage surveys would be too much to include in one text set, so I started with a text set based on the countries represented in the students' families.

In the curation of the text set based on the 13 countries identified as represented within our classroom, I sought to compile a multimodal text set composed of various types of texts, websites, and videos, in both English and Spanish whenever possible. For each country, I tried to include two websites that included text and other graphics, two videos, an e-book, and three books, one informational about the country, one biographical about someone from the country, and one fictional text either set in the country or about someone from the country, or the retelling of a myth or folktale from the country. The rationale behind including the various genres of texts was to include cultural values that may be more or less overt depending on the type of text. Some countries were harder to compile resources for than others, but I was able to find at least one video, book, and website for each one. I tried to pull resources from websites I had access to as a teacher that were either free or resources paid for by the school district. The videos came from Discovery Education or YouTube, and the websites I used were informational pages about the countries from National Geographic Kids and/or PebbleGo. The e-books were general informational texts about the countries that were assigned to students on the application Epic!. All of the physical books that were biographies, fictional stories, or myth/folktales were found in the school library.

Country	Books
Argentina	Basch, A. (2012). <i>Conoce a José de San Martín</i> . Illust. by P. De Gaudio. Madrid, Spain: Alfaguara Infantil. Morreale, M. (2015). <i>Lionel Messi</i> . New York, NY: Children's Press. Lilly, M. (1999). <i>Aletín and the falling sky: A Mocovi myth</i> . Illust. by C. Reasoner. Vero Beach, FL: Rourke Press.
Cameroon	Tchana, K. (2002). <i>Sense pass king: A story from Cameroon</i> . Illust. by T. S. Hyman. New York, NY: Holiday House.
Colombia	Brown, M. (2011). <i>Waiting for the biblioburro</i> . Illust. by J. Parra. Berkeley, CA: Tricycle Press.
Cuba	Da Coll, I. (2005). <i>Azúcar: The life of Celia Cruz</i> . New York, NY: Lectorum Publications. González, L. M. (1999). <i>The bossy gallito: El gallo de bodas</i> . Illust. by L. Delacré. New York, NY: Scholastic.
El Salvador	Alphin, E. M. (1997). <i>A bear for Miguel</i> . Illust. by J. Sandin. New York, NY: Harper Trophy. Klepis, A. Z. (2015). <i>Francisco's kites: Las cometas de Francisco</i> . Illust. by G. Undercuffer. Houston, TX: Pinata Books.
England	Barton-Wood, S. (2002). <i>Queen Elizabeth II: Monarch of our times</i> . Austin, TX: Raintree Steck-Vaughn. Walker, R. (2002). <i>Jack and the beanstalk</i> . Illust. by N. Sharkey. Cambridge, MA: Barefoot Books.
Germany	Hettinga, D. (2001). <i>The brother's Grimm: Two lives, one legacy</i> . New York, NY: Clarion. Powell, M. (2011). <i>The elves and the shoemaker</i> . Illust. by P. Rodriguez. Mankato, MN: Stone Arch Books.
Ireland	Doyle, M. (2000). <i>Tales from old Ireland</i> . Illust. by N. Sharkey. New York, NY: Barefoot Books. McGill-Callahan, S. (1999). <i>The last snake in Ireland: A story about St. Patrick</i> . Illust. by W. Hillenbrand. New York, NY: Holiday House.
Italy	De Paola, T. (1991). <i>Strega Nona: An old tale</i> . New York, NY: Scholastic. Venezia, M. (1989). <i>Da Vinci</i> . Chicago, IL: Children's Press.
Mexico	VanHecke, S. (2016). <i>Esquivel: un artista del sonido de la era espacial</i> . Illust. by D. Tonatiuh. Watertown, MA: Charlesbridge. Tonatiuh, D. (2016). <i>The Princess and the warrior: A tale of two volcanoes</i> . New York, NY: Abrams Books for Young Readers.
Panama	McDonald, M. R. (2006). <i>Conejito: A folktale from Panama</i> . Illust. by G. Valério. Little Rock, AR: August House LittleFolk. Presilla, M. E. (1996). <i>Mola: Cuna life stories and art</i> . New York, NY: Henry Holt.
Poland	Prose, F. (2000). <i>The demon's mistake: A story from chelm</i> . Illust. by M. Podwal. New York, NY: Greenwillow Books. Venezia, M. (1999). <i>Frederic Chopin</i> . New York, NY: Children's Press.
Scotland	Lattimore, D. N. (2002). <i>The sailor who captured the sea and other celtic tales</i> . New York, NY: HarperTrophy.

Figure 1: Books used for the text set that were biographies, fictional stories, and myths/folktales

## Reading Responses

I provided the students access to the texts for two weeks. Websites and videos were posted in Google Classroom, e-books were assigned to student accounts on the application Epic!, and physical books were on a bookshelf in the classroom. A written response was collected each week on Google Classroom. Students were allowed to respond to one text of their choice from the text set on Google Classroom by responding to one prompt from a menu of reader response prompts. The reader response menu items included the following prompts in English and Spanish so students could also have choice in their language of response:

- Paste a picture you liked from something you read or watched OR that reminds you of something you read or watched and write two sentences about it.
- Write three sentences about how you have a personal connection to something you read or watched.
- If you read a story, write a prediction for what you think might happen next at the end of the story. Write at least 3 sentences.

- If you read a nonfiction book, watched a video, or browsed a website, write your favorite fact that you learned and two sentences about why you liked it.
- Does what you read or watched make you think of another book, video, or webpage? Write about how it connects to something else. Write at least 3 sentences.

I also read one of the fiction books from the text set each week to the whole class. As a class, the students selected which text they wanted to hear read aloud by voting. After reading, students wrote a response to a prompt that was written on the board. Students were able to respond to the prompt in English, Spanish, or a combination of the languages. The prompts were as follows:

- If this story was set somewhere else, where would it be? How would that change the story?
- Which character was the most like you? Explain how you are alike.
- Which book was your favorite? Why? Why not the others?

### **Observations and Student Work Samples**

As students were given class time to explore the various text sets, I noticed that they often first gravitated towards texts that represented their cultural heritage, many times selecting the informational websites on National Geographic Kids or PebbleGo to learn more about the countries that their families came from. I also noticed these influences in their written responses, both on Google Classroom and on paper. The texts read to the whole group were read in English, but the texts selected by the students could have been in English or Spanish. I saw the presence of the two languages in their written responses as they sometimes responded in Spanish or even infused Spanish words in various places throughout their mostly English responses. The following samples show the influences of students' cultural heritages and the presence of translanguaging. Note that all student names have been changed to protect student confidentiality.

### **Cosmopolitan Views in Student Work**



Figure 2: David's response on Google Classroom.

David's mother is from Argentina, and the first text he chose to read was the National Geographic Kids website about Argentina. Throughout the week, he continued to read more about Argentina, by himself and with other students, and he decided to write about Argentina in his reading response. His excitement over seeing his cultural heritage represented in the texts about Argentina and then sharing these texts with other students with different cultural backgrounds shows how he took on the proximal stance of cosmopolitanism.

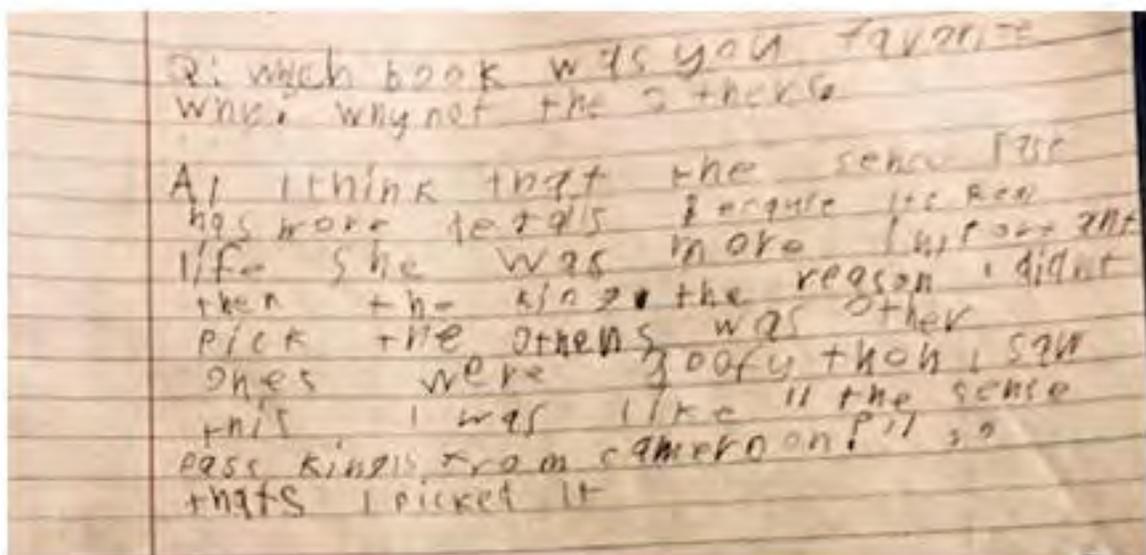


Figure 3: Hugo's response to the final prompt about the text set.

Hugo's response reads:

Q: Which book was your favorite? Why? Why not the others?

A: I think that the Sense Pass has more details because it's real life. She was more important than the king. The reason I didn't pick the others was other ones were goofy. Then I saw this, I was like "The Sense Pass King is from Cameroon?" so that [why] I picked it.

Hugo's family is from Cameroon and he was excited to see that the book was set in his family's country of origin. I saw him read the text multiple times throughout the duration of this text set with other students in the class. His eagerness to share a book that represented his cultural heritage with other students in the class and their eagerness to learn about his cultural heritage show both his and the other students' growing cosmopolitan views, moving into reflexive and reciprocal stances of cosmopolitanism as students explored their cultural differences and connections through the use of this text.

### Translanguaging in Student Writing

**Write three sentences about how you have a personal connection to something you read or watched.**

When there was a photo of Pupusas, it reminded me when my grandma comes over to our house and makes us pupusas because we are salvadoran. And it also reminded me when I used to make pupusas with my grandma when I was little. And when I saw the woman cooking the pupusas outside it reminded me of a day when it was my brother's birthday and my grandma made pupusas outside and my brother and I were helping my grandma make the pupusas.

**Book or website or video: National Geographic Kids-El Salvador**

Figure 4: Amaya's response on Google Classroom.

Amaya’s family is from El Salvador and, while I noticed her reading about many different countries, she chose to write about the country that her family is from. As she read about El Salvador, she was reminded about her experiences with her grandmother. Even though she calls her grandmother “abuela”, I thought it was interesting that she chose to translate the word “abuela” to “grandma”, but she opted to keep the word “pupusa” in Spanish instead of trying to translate it into an English word. In this sample, she shows how she navigates between English and Spanish in ways that communicate her meaning.

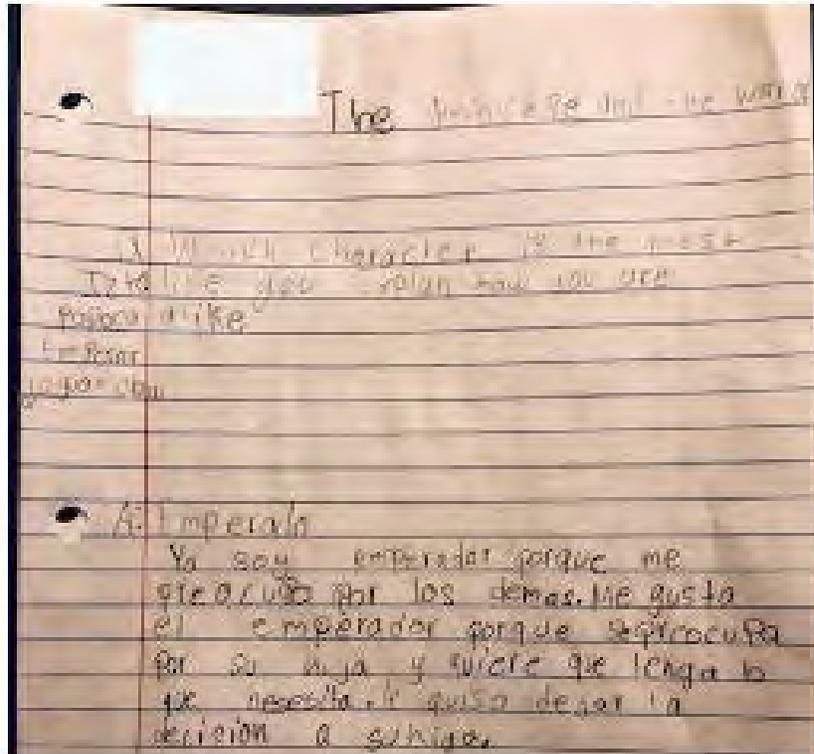


Figure 5: Jose’s response to the text The Princess and the Warrior.

Jose’s response reads:

Q: Which character is the most like you? Explain how you are alike.

A: Emperador. Yo soy emperador porque me preocupo por los demas. Me gusta el emperador porque se preocupa por su hija y quiere que tenga lo que necesita. Le quiso dejar la decision a su hija.

English translation:

Emperor. I am the emperor because I worry about others. I like the emperor because he worries about his daughter and wants her to have what she needs. He wanted to leave the decision to his daughter.

Like in the previous example, the text was read in English and the prompt written on the whiteboard was also in English. After discussing the text with a partner in English, Sofia chose to write her response mostly in English with some words and dialogue in Spanish. She writes about “Arroz con Pollo” [rice with chicken], a Cuban dish. She also writes, “dale dale casas” [give it, give it, houses]. Her grandparents are from Cuba and the influences of her Cuban cultural heritage and the Spanish language are present throughout her response. Her language choices in combining a mixture of English and Spanish allowed her to infuse the influences of her cultural heritage in her writing.

### **Drawing on Students’ Cultural Heritage and Linguistic Repertoires**

As teachers, we often hear about the importance of getting to know the students we serve so that we can engage them by making learning relevant to the students as individuals. I was able to see how seeking input from students and their families helped me curate a text set that was engaging. The inclusion of students’ cultural heritages in the text set allowed students to see themselves and their peers reflected in the texts. While all of the written examples showed how students drew on their cultural and linguistic repertoires and easily took on a proximal stance, my observations of their interactions with texts and their peers showed how students took on reciprocal and reflexive stances as well. As students shared the texts with each other, these texts acted as the sliding glass doors through which they were able to enter each other’s worlds and learn more about each other’s cultural heritages (Sims Bishop, 1990).

Throughout the duration of the text set, students shifted from learning more about their own cultural heritages into sharing them with one another as time went on. This shifting point of view helped students develop a cosmopolitan view of culture in that they embraced their differences while also finding connections across their cultures (Hull & Stornaiuolo, 2014). Giving them the freedom to express themselves in English or Spanish, while also providing texts in both languages, created an environment in which students felt safe enough to explore their linguistic expression, both verbally and in written formats (García & Lin, 2017). Valuing students’ cultural heritages and their linguistic expression elicited rich responses from them and to learn more about students and their families. Nurturing the home and school connection helps students be more successful, and, through this text set, students were excited to explore the texts and share what they had learned about themselves and about their peers with their families.

### **References**

García, O., & Lin, A. M. (2017). Translanguaging in bilingual education. *Bilingual and Multilingual Education*, 117-130.

Hull, G. A., & Stornaiuolo, A. (2014). Cosmopolitan literacies, social networks, and “proper distance”: Striving to understand in a global world. *Curriculum Inquiry*, 44(1), 15-44.

Roudometof, V. (2005). Transnationalism, cosmopolitanism and glocalization. *Current Sociology*, 53(1), 113-135.

Sims Bishop, R. (1990). Mirrors, windows, and sliding glass doors. *Perspectives*, 1(3), ix–xi.

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## Inquiring about Language through Dual Language Picturebooks: A Case Study

Dorea Kleker, Kathy G. Short, and Nicola Daly

*It is the first session of the Spring 2020 Global Cultures afterschool club. Safita, an inquisitive fifth grader, enters the library and eagerly sits down at a table to browse a collection of dual language picturebooks that combine English with a range of languages. She settles in with several books, placing post-its on places she finds interesting. After browsing, Safita selects Naupaka (Beamer, 2008), written in Hawaiian and English, as her favorite to share. She gives a detailed summary of the book, informing her peers that “it looks like a longer read because of the Hawaiian but it’s superfast” because she had read only the English text in the book. Nicola informs the group that all of the books they browsed contain more than one language. While other children flip back through the pages of the books to locate the languages other than English, Safita goes a step further, using her knowledge of English phonology to attempt to quietly read the Hawaiian sections that she had previously skipped. Her immediate attention to an unfamiliar language was an inquiry about the pronunciation of that language and a willingness to take a risk. Later that day, as children compile a list of the languages they have heard about, Safita adds Hawaiian.*

Safita is a curious fifth grader who arrived each week at our afterschool Global Cultures Club eager to learn and enthusiastic to share her knowledge and discoveries. In one of the first club sessions she described herself as “mostly North American and Mexican” with a “little part” Scottish who lived in an English dominant home. While her mother and grandparents speak Spanish, Safita shared, “I can’t necessarily understand Spanish, but I know a few words”.

This article follows Safita over the course of six weeks as she engaged with dual language picturebooks to develop language awareness and inquire about how these languages are used in books, her life, and the world around her. We selected Safita as a case study because she often shared her theories out loud as she talked her way into understanding, giving us access to her in-process thinking. Through this case study, we argue that dual language picturebooks provide a unique opportunity for children to explore their understandings and challenge their beliefs about language and language diversity.

### Our Teaching Context

The Global Cultures Club began in Spring 2019 at a public magnet elementary school in a Latinx neighborhood in Tucson, Arizona. Dorea and Kathy started this club as a space to engage third to fifth-grade students in inquiries around global cultures, avoiding the pitfalls of only exploring easily observable aspects of these cultures—food, fashion, folklore, festivals, and famous people—through making connections between these aspects and deeper cultural values. The school has an active after school program with a range of options in which children can participate. Each semester, both paper and electronic invitations to the Global

Cultures Club were sent home with families and all children who applied were invited to participate free of charge with class sizes ranging between 5-12 children.

In the spring of 2020, Nicola, a Fulbright scholar from New Zealand, joined our team and we shifted from a broad exploration of global cultures to a specific focus on language exploration using dual language picturebooks. Our goal was not to use these books to teach children specific languages; rather, we were interested in how children would engage with invitations around dual language picturebooks to inquire about language and develop language awareness.

Dual language picturebooks combine two or more languages in three ways:

1. interlingual (one language dominates with words and/or phrases from another language interwoven throughout, often in dialogue)
2. bilingual (entire text is presented fully in two languages, either on the same page, on facing pages, or in different sections of a book)
3. dual version (book published as two separate versions featuring the same cover, design, illustrations, and layout but different languages)

The club met once a week after school for 90 minutes in the school library. Each of the six sessions were built around a specific language focus (Spanish, Māori, or Indigenous languages spoken in the U.S.) and followed a similar format. Sessions began with time for children to browse dual language picturebooks related to that week's focus. During this time, children could engage with the books in any way they chose and regularly used post-it notes or large pieces of chart paper to note their connections and wonderings. Immediately following browsing, children shared their favorite books with the whole group, why they selected these, and any interesting observations. Sessions always included a read aloud of a dual language picturebook and a guided invitation that engaged children with the featured languages. Each session ended with children recording something they learned and something they were wondering about in their journals.

Inquiry is a collaborative process of connecting to and reaching beyond current understandings to explore tensions significant to learners (Short, 2009). As we analyzed our curriculum plans, field notes, and children's responses from the sessions, we realized that we could use an adapted inquiry cycle framework (Short & Harste, 1996) to describe the different opportunities that dual language picturebooks provided for the children within our club.

*Connections* to the life experiences and understandings of learners were our starting point of inquiry. Experiences that immersed children in exploring dual language picturebooks added to their life experiences from which they could build connections for a close study of these books. These *invitations* for close study after read-alouds expanded their knowledge, experiences, and perspectives through guided inquiry in that we determined a focus around which children asked questions to examine these books. Some of these invitations were *demonstrations* by teachers or children of strategies to use in reading and making sense of

the languages in dual language picturebooks. As children expanded their understandings, they posed problems or tensions that were significant and compelling to pursue through *inquiry explorations* of the books. They also needed time to pull back and engage in *reflections* on their learning, to attend to difference about what was new or unlike what they already knew.

As children engaged with dual language picturebooks within this inquiry cycle, we particularly noted the active engagement of Safita and decided to use her language inquiries to build a case study. Safita often talked out loud as she went about her inquiries and so provided access to her thinking processes. This case study examines both what she explored related to language and how she went about her inquiries.

### Safita as a Language Inquirer

In the first session, after children shared the books they had browsed and brainstormed the names of languages they knew, Nicola brought out a world map and asked children where they believed the languages they knew might belong. While some children immediately begin placing post-its with their languages on the map, Safita took her time; she examined the map and looked closely at the names of countries to confirm the languages she thought she knew as well as to play with the possibilities of new ones, “I don’t know Egyptian, I don’t know Canadian, I don’t know Saudi Arabian”. She then wondered where Swahili was, a language encountered in *Lala Salama* (MacLachlan, 2011), a book she had browsed earlier in the day. Kathy reminded her that the book takes place in Tanzania and together they located this country on the map.



Figure 1: Safita examining a world map to consider where languages are spoken.

Rather than top-down lessons about languages and where they are located, guided invitations such as these were intentionally planned so that open discussion and conversations became the central focus. It was this talk *about* language—to both herself and with others—that allowed us to see Safita’s strategies for making sense of language. She used her personal connection to the languages she knew to explore other language possibilities, bringing in books she had browsed to pursue inquiries about the names of languages and where they are located.

### Exploring Language Use in Picturebooks

In week 2, Spanish/English dual language picturebooks were set out for browsing. After browsing, Safita chose to share *Rubia and the Three Osos* (Elya, 2010) and *Clara and the Curandera* (Brown, 2011). This time she incorporated her observations about the presence of two languages into her description, telling us, “One is a mix of English and Spanish and the other is in two languages, English and Spanish”. When Nicola asked her to say more about how each of her books uses language differently, she replied, “This one kind of just mixes Spanish in...like it uses Spanish words in English, and this is in both languages. It’ll have one page with English and then with Spanish”. When Nicola wondered aloud why the books might be made like this way, Safita suggested, “because they think that if some people speak Spanish, they can mix Spanish in a bit with English and the other one is if you only know Spanish and they only know English”. Nicola drew upon Safita’s observations about the use of multiple languages in picturebooks and gently invited her into a deeper study and consideration of author intent.



Figure 2: A Selection of Spanish/English Dual Language Picturebooks.

As the weeks progressed and children continued to browse and explore picturebooks in different languages, Safita remained enthusiastic in sharing her discoveries with others. In addition to providing detailed retellings, she also routinely included what she noticed about the ways languages are used within books. In a session focused on Indigenous languages spoken in the U.S., such as Cherokee, Hopi, and Navajo, Sarita shared a book, offering her usual detailed retelling, and then concluded with an analysis of language order in the book, “The other language is in Navajo. They put Navajo on top and English on the bottom”. When Nicola asked her why the languages might be in that order, she replied, “It’s a Navajo story. The most related language comes first”. Safita shared her belief that Navajo came first because this book was written for Navajo children who could read that language and therefore was the most important language, in contrast to the majority of bilingual books she had explored in which English comes first.

A few minutes later, when a child shared a book featuring three languages (Inuktituk in script, Inuktituk in Latin script and English), Safita used her developing language awareness and understandings of decisions about language placement in books to offer yet another interpretation, “I noticed that it has the symbols first, then the sounds second, and the English last”. When asked by Nicola why this might be the case, Safita continued to build on her previous analysis adding, “It’s the most important to the least important. English is the least important, even though it’s the language everybody knows”. Safita demonstrated her knowledge of the societal dominance of English, noting that English in this Indigenous book was the least important for the audience, “even though it’s the language everybody knows”. These open spaces to talk about and explore language in the context of dual language picture books—both independently and alongside others—allowed us to see what Safita was making sense of and how she was doing it.

### Trying Out New Languages

At the beginning of each session we provided a wide range of dual language picturebooks for browsing in order to see what children would find interesting and build from these, not to guide children to a specific observation. In two sessions, we drew from children’s noticings about the presence of multiple languages in the books to conduct our read alouds of bilingual picturebooks in both languages; we wanted to invite children to consider the impact of reading/hearing two languages in different orders. This allowed children to experience hearing a familiar language first because both books presented the English language text first, and then to immediately experience hearing the same story in another language. For example, Kathy and Nicola read *My Colors, My World/Mis colores, mi mundo* (Gonzalez, 2007) with Nicola reading the English text and Kathy reading the Spanish text. Once this was done, we read the book again, this time in Spanish first and English second. Contrary to our expectations, children appeared to listen more intently to Spanish (less familiar language) when it was read first rather than second. Safita said that because she knew some Spanish, she liked to listen to Spanish first to see how much she understood and then check herself when the English was read second.

Each session of the Global Cultures Club included a read aloud of a dual language picturebook with demonstrations of how readers might approach books containing languages that are unfamiliar to them by using illustrations, context clues and pronunciation guides. Safita began to use these as she shared her favorite books from browsing. In one sharing, she showed a page to the group and pointed out how the text was written in English with a few Spanish words thrown in. She proceeded to read a line aloud to illustrate her point, paying careful attention to the Spanish pronunciation. Later, in a session focused on dual language picturebooks featuring Māori, Safita shared *Seven Stars of Matariki* (Rolleston-Cummins, 2008), intentionally using Māori words and attending to careful pronunciation throughout her retellings. As noted in the opening vignette, Safita was curious about and quietly attempted to read the Hawaiian to herself in our first session. After a few sessions of guided invitations, demonstrations, and book browsings about and around various languages, she was eager to make her language attempts more public. We noticed that it became important to Safita to not only notice the presence of other languages in the books she was browsing, but also to attempt to use them as often and as accurately as possible in her sharing and discussion of them.

As a guided invitation designed to have children engage with a language that neither the children nor we were familiar with, Nicola introduced *We are Grateful: Otsilaheliga* (Sorell, 2018) an interlingual book written in Cherokee and English and the children quickly took note of the Cherokee on the cover. The other students guessed this to be a “secret language” and Safita wondered if “those marks are symbols?” Nicola provided additional context, telling them that Cherokee has its own unique way of writing. She pointed out the title written in English ‘We are Grateful’, in Cherokee spelled using the Latin alphabet, ‘Otsaliheliga’, and in the Cherokee writing system. She then read aloud the book, in which post-its had been used to cover the English translation for the Cherokee words in the English text. Nicola was able to read aloud the Cherokee words because the book provided a pronunciation key at the bottom of each page. As she read, children guessed the meaning of the Cherokee words using cues from the visual and textual context. They could immediately check their guesses by removing the post-it.

After reading the book aloud, Nicola concluded by showing children the end page which contains the Cherokee syllabary. As children read the word “syllabary,” Safita excitedly exclaimed, “it’s like a syllable library!”, building upon her previous noticing of symbols to create a different, more elaborate understanding of this unfamiliar orthography in which each symbol is a sound for a syllable. Nicola invited children to use the Cherokee syllabary to attempt to write their own names. Safita quickly noticed that the top row “looks like it’s the vowels ‘cause it’s a, e, i, o, u”. She added, “some of their letters look like normal letters, like the G and the D and the R and the T and the Y and the A”. Safita worked alongside her peers, looking carefully at the chart and attempting to find the syllables that corresponded with those in her name.



Figure 3: Safita uses Cherokee syllabary to write her name.

As Safita looked for the /fi/ in her name without success she considered a previous engagement with a read aloud of *The Marae Visit* (Beyer & Wellington, 2019), a dual language Māori/English book. During this read aloud, a peer wondered about a particular word—*whia*—which led to a discussion about how the “wh” makes a /f/ in Maori. Safita pondered this as a possibility in Cherokee and searched for a close alternative in her syllabary chart. Safita continuously used intertextual connections from books, group discussions and her life to test out her hypotheses about new languages and how to use them.

### **Conclusion: Lessons from Safita**

As we reflected on our experiences with dual language picturebooks in the afterschool club, we were impressed with Safita’s interest in these books, her depth of insight about the books and languages, and her excitement in exploring new languages. Dual language books challenged her expectations of the format of picturebooks and her notions of which she could and could not read. Despite the presence of multiple languages in all the books, Safita did not initially see—or was unsure of—how to interact with them. A dedicated time to connect with the format and content of these books and the space to have open conversations about these allowed her to explore her inquiries and continue to draw upon these understandings in new contexts.

Safita’s responses to and engagement with dual language picturebooks over the six weeks of the Global Cultures afterschool club offer important lessons to consider when using these books in classrooms: 1) picturebooks in languages that are familiar to children provide a good beginning point to encourage connections to their language resources; 2) children should have access to interlingual books that contain unfamiliar languages so they can develop strategies for how to engage with unfamiliar words and phrases in new languages; 3) time to browse books is essential as the anchor to provide a source of rich connections and possibilities for inquiry across other experiences; 4) a dedicated time for sharing self-selected books opens a

space for children to reflect on their connections and wonderings and gives teachers insights into children's knowledge, inquiries, and misconceptions from which invitations can be created; and 5) teachers who read and work alongside children in spaces that are not dominated by teacher questions or highly directed activities create opportunities for informal talk with children and for placing themselves in the position of co-learners. This co-constructed talk provides teachers with deeper insights into children's thinking and inquiries.

Many children have a great deal of linguistic capital that comes from living in multilingual communities, families, and classrooms, even though they may be unaware of that knowledge. They also bring a joy to exploring new languages that is inspiring, almost as though language is a puzzle for them to solve, a perspective that differs from how many adults approach a new language. Dual language picturebooks provide a means for children like Safita to tap into and expand their linguistic capital and put them in the position of becoming language inquirers.

### Children's Literature References

- Beamer, N. (2008). *Naupaka*. (C. K. Loebel-Fried, illus.). Bishop Museum.
- Beyer, R., & Wellington, L. (2019). *The Marae visit*. (N.S. Robinson, illus.). Duck Creek.
- Brown, M. (2011). *Clara and the curandera*. (T. Muraida, illus.). Little Brown.
- Elya, S. M. (2010). *Rubia and the three Osos*. (M. Sweet, illus.). Little Brown.
- Gonzalez, M.C. (2007). *My colors, my world/Mis colores, mi mundo*. Children's Book Press.
- MacLachlan, P. (2011). *Lala Salama: A Tanzanian lullaby*. (E. Zunan, illus.). Candlewick.
- Rolleston-Cummins, T. (2008). *Seven stars of Matariki*. (N. S. Robinson, illus.). Huia.
- Sorell, T. (2018). *We are grateful/Otsilaheliga*. (F. Lessac, illus.). Charlesbridge.

### References

- Short, K. (2009). Curriculum as inquiry. In S. Carber & S. Davidson, (Eds.). *International perspectives on inquiry learning* (pp. 11-26). John Catt.
- Short, K.G., & Harste, J., with Burke, C. (1996). *Creating classrooms for authors and inquirers*. Heinemann.

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## Paychecks, Bills, and... ‘Zines? Exploring Financial Literacy and Systemic Poverty with Eighth Graders

Antonia Moore

“Poverty is a vicious cycle. Someone takes out a loan to pay off taxes, then struggles to pay off the interest rates on that loan and has to take out another until the bank rejects them due to their credit score. They’re left with nothing while the government and the richest of the rich sit and prosper.”

“With this perspective, I’ll help to end the persecution of those that are pushed below the poverty line.”

“I need to give a voice to the voiceless.”

“In order to make change, the rich have the most power...it is harder than ever to get out of poverty and more expensive than ever to be in it.”

“In order to make a change, the person with the most power is you.”

“This unit allowed us to experience real-life things without real-life consequences, such as budgeting for groceries, dealing with debt, or even applying for a loan.”

Comments made by seasoned financial professionals? No! Eighth grade students, who, a month prior, were asking, “Why do we have to learn this in school?” and “When are we ever going to use this in real life?”

While the existence of flat-Earthers and anti-vaccinators should be evidence enough, I took to heart the question that so often plagues educators — Is there a way to weave together a simulation of real-life issues with applicable financial literacy? With that mindset, a cross-curricular financial literacy unit was born. While the core of my ambition in designing such a project was to give students of any privilege a taste of injustice that could serve as a motivator to take action, the essential components of its design was for students to feel real, tangible inequity. They would live as two different people in our classroom — design a budget, receive paychecks for their profiles, modify their budgets, have financial hardships, apply for loans, and have an opportunity to vote to raise the minimum wage (all with unforeseen restrictions).

This was my fourth year of teaching eighth grade English Language Arts (ELA) in the school district that I attended and in which I was raised. In my K-12 years as a White, middle-class female student, I didn’t think much about the district’s dynamics regarding socioeconomic status, race, or diversity. Now, as someone paying more attention to the American Indian mascot nicknamed “The Brownie” (and a 0% American Indian population), the 82.5% White population, as well the 30.1% students in economically disadvantaged families, I noticed the

disparity of poverty and privilege playing against itself. The diversity and socioeconomic status of the community has changed significantly since I was a student, but the lens to recognize this shift is still foggy. To still hear suggestions in the district that to succeed one simply needs to pull oneself up by their bootstraps is as outdated as a sundial or a quill pen.

I invited a math teacher to join me in this project because of his background and life experience regarding poverty and financial literacy. Mr. Walas, like me, started his teaching career in the urban school he used to attend. His degrees were in finance and economics, and he had worked in the corporate world for about eight years. Before he became a teacher, he traveled the world, including every state in the U.S. and nearly every continent, realizing how much young people thirst for knowledge, and how math could empower people. Mr. Walas' background was a great fit for the project I was designing.

I started to research how to accommodate marginalized students in a privileged school setting. To create the biggest possible change in systemic socioeconomic oppression and disrupt the narrative by which it is perpetuated, I came to believe the population to address was not students who experience oppression, but those with greater social and economic status. Giving tools to those that most need them seems second-nature, but strategies like a canned food drive for the hungry, for example, are short-term solutions for perpetual cycles of poverty.

I designed a project that immersed students in an authentic multi-faceted experience, with profiles I generated based on real people. Just a few examples of the twenty profiles include a grandmother living on an American Indian reservation, someone diagnosed with OCD, a single parent, a gay couple who loses their house in a natural disaster, and a new teacher trying to afford student loans, rent, and classroom supplies (the imagination did not have to be stretched far on that one).

I knew colleagues who would be eager to do this project with me, and the principal was supportive. He stopped in periodically during the project, which made students feel like they were doing important work. All of the nearly 90 students share the same teachers across disciplines, so we were able to bring students together each class period to work on this project.

### **The Financial Literacy Project**

To get students thinking about their own biases regarding poverty before and after the project I used Plickers (a free, anonymous-to-other-students data collecting app that only requires a device by the teacher) to answer *True*, *False*, or *Unsure* to the following statements:

- All people have equal potential to succeed.
- When someone isn't making enough to get by, it's usually because they're lazy.
- Helping people that are struggling will keep them from being able to help themselves.
- If someone isn't doing well somewhere, they should move.
- As long as people work hard enough, they can have what they need to live comfortably.

We revisited these statements at the conclusion of the project, and it was important that the students consider their biases before starting the financial literacy unit and the poverty vs. affluence simulation. I collected data across five classrooms of students at the onset of the project. Students' responses are represented as percentages in Figures 1 – 5.

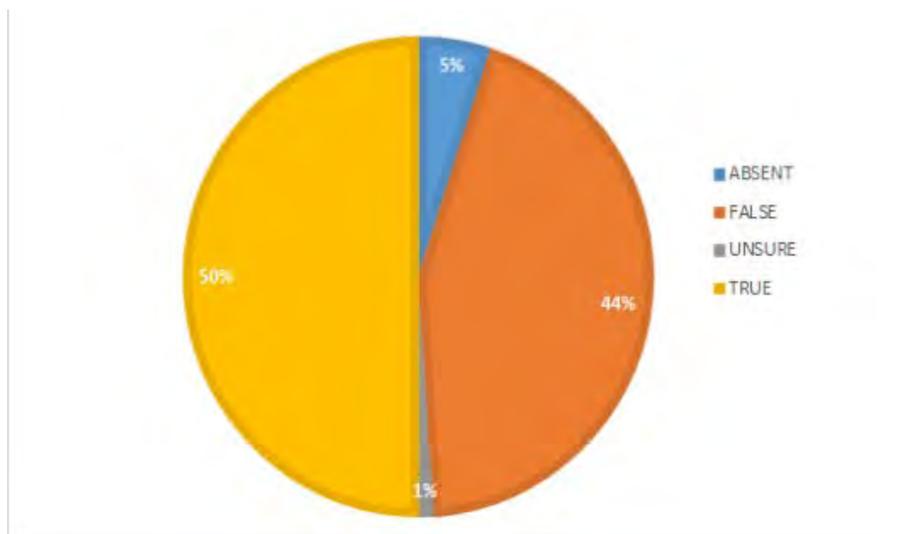


Figure 1: Pre-Data: All people have equal potential to succeed.

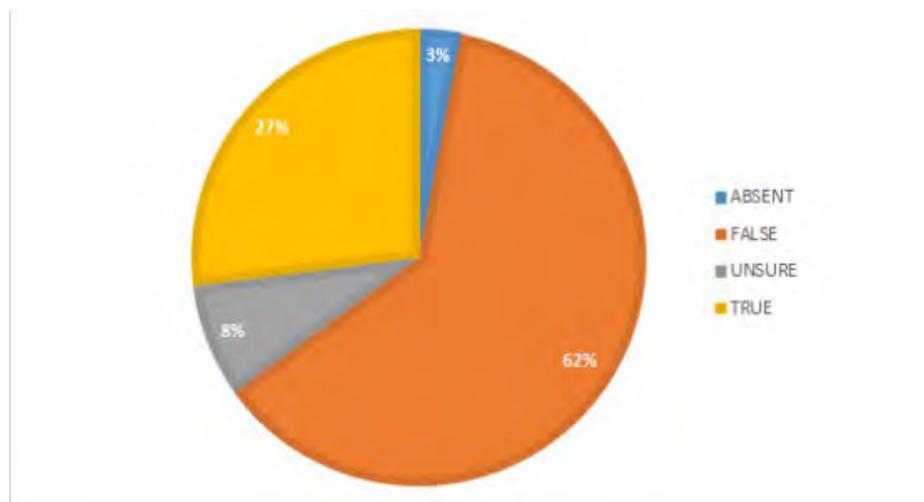


Figure 2: Pre-Data: When someone isn't making enough to get by, it's usually because they're lazy.

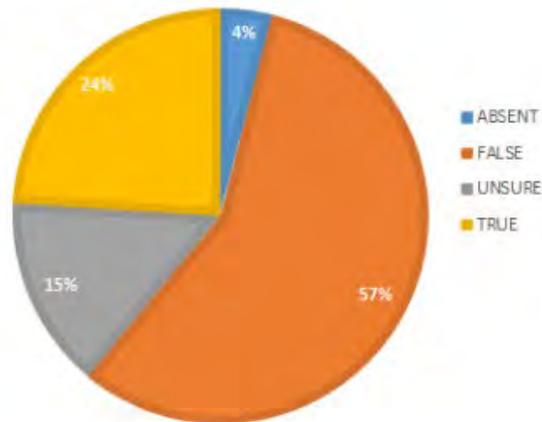


Figure 3: Pre-Data: Helping people that are struggling will keep them from being able to help themselves.

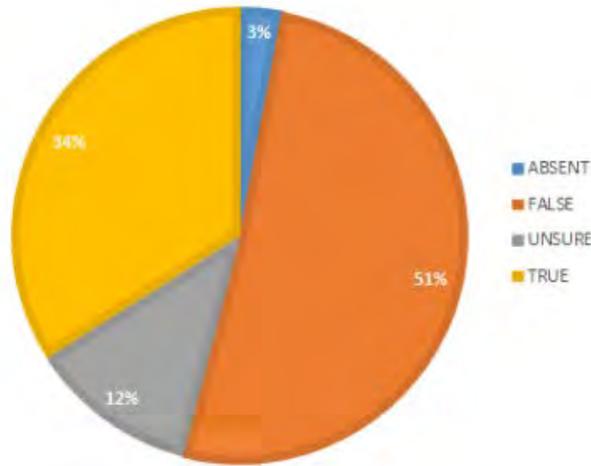


Figure 4: Pre-Data: If someone isn't doing well somewhere, they should move.

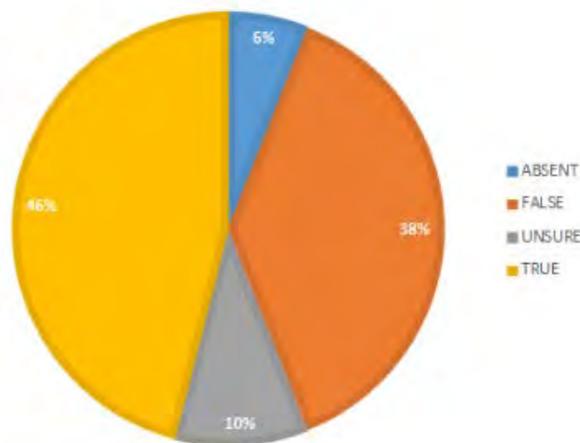


Figure 5: Pre-Data: As long as people work hard enough, they can have what they need to live comfortably.

### The “Secret” Day One

The plan was to generate spirited inquiry based on a reflex sparked by injustice. I wanted students to have a visceral reaction to the discrepancy in their access to resources as a hook.

The day before we kicked things off, I told students *Time Magazine* was writing a piece about how people stop coloring with crayons after elementary school. The editors were holding a coloring contest for a template they provided (see Figure 6). I told students if they won, they could receive \$500, their colored template would be the cover of *Time*, and they would have their picture in the magazine. Students were excited, until I told them an arbitrary number would determine how many crayons they could use. I would choose the colors, and they could not share them. One student received 15 crayons. One was given 10 crayons. Some were given 3 or 4, many got 1 or 1/2 a crayon. One student in each class period received a white crayon with which to color the template printed on white paper. The outrage was palpable; they needed this taste of inequity to fuel the work ahead.

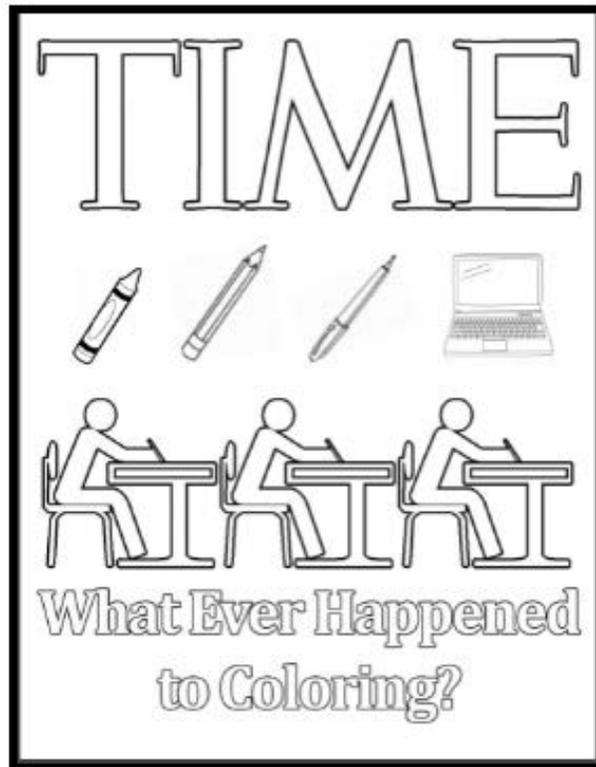


Figure 6: The fictional *Time Magazine* cover template.

These are just some of the “colorful” comments the students made as they tried to finish their cover:

- “There’s a problem with this system!”
- Student with five crayons: “I can’t do a good job!”
- Student with a single white crayon: “You’re complaining?!”
- Student with fifteen crayons: “These are bad colors. I’m only going to use two of them.”
- Student with ½ crayon: “Stop complaining! I wish I had three kinds of green!”
- “I’m not coloring this good because I can’t. I’m not going to win.”

At the end of the period, I told them time was up, collected the templates, and said nothing more.

### **Day One — As Far as the Students Knew!**

This project took place in the school library twice each day, once for Math and once for English. Each period on day one, students came into the library and found their assigned table. There, a colorful folder awaited them. Unbeknownst to students, green folders contained profiles with a high socioeconomic status (SES), yellow folders were middle-class SES, and red were low SES profiles. Each student had two different colors between the two periods, for comparison purposes.

First, they read their profile information and used the guiding worksheet to make a tentative budget for the expenses contained in their profiles. They used a Chromebook to reflect and journal using Google Keep, answering the question, “Summarize your person’s profile in a few sentences. What did you budget for today?” Since students would have two responses by the end of the day, one per profile, they were encouraged to color-code their responses for clarity.

### **Day Two — Budgeting for Groceries**

Students were given a worksheet to calculate a grocery budget. They had to decide the quantity and type of food they would need for a week’s worth of groceries, determine prices, then multiply to create a monthly budget (see Figure 7). Students were reminded they could not live off of peanut butter and ramen noodles alone, and that they should consider toiletries as well. One bold but embarrassed young man approached me to ask if he should include feminine sanitary products since his profile was a woman. When I encouraged him to do so, he returned to me again, baffled at how expensive these items are.



Figure 7: Students Using Supermarket Fliers.

Once they developed a grocery budget, students received their profile’s bi-monthly paycheck. They edited their budget to align with their profile’s resources. Once they modified the best they could (and took many groceries off some of their lists), students journaled their answer to the question, “How did your budget change for your profile after you received your paycheck?”

### Day Three — Applying for a Loan

Each profile was assigned a financial hardship (such as a car breaking down or needing a medical procedure), the amount it would cost, and a credit score. Students were told they could apply for a loan if they needed help paying for the financial hardship.

Before students did specific work with calculating their loans, they were given a worksheet that defined terms of *principal amount*, *loan term*, *APR %*, and *FICO score*, and broke down how to use the numbers in a step-by-step process that students could follow. They had some experience in using spreadsheets and calculating how to turn percentages into decimals before this activity, so this part built on and connected to prior knowledge.

Students applied for a loan at a bank run by Mr. Walas who was acting as a loan officer. They reported their credit score to Mr. Walas (see Figure 8). Based on their credit score, Mr. Walas gave them a specific 5- and 10-year APR percentage.



Figure 8: Student Bringing Her Credit Score to the Bank to Get Her APR% from Mr. Walas.

With APR percentages in hand, students returned to their tables to determine, with their group, which loan their profile could afford using the formula  $loan = principal\ amount \times rate \times time$ . Students calculated how much they would pay back for the loan overall, and tried to fit the payments into their budget. Finally, students used Google Keep to journal their response to the prompt, “In your own words, describe: *Principal Amount*, *APR%*, and *Loan Term*. What did you learn about calculating interest on a loan?” Ultimately, many students realized that their profiles would have an easier time paying the 10-year monthly payment, but that would also cost them hundreds or thousands more dollars in the long-run.

### Final Day in the Library

Students filed into the library, intrigued, yet carrying the stress of their virtual financial burdens. Some students commented that they were afraid to open their folders today, that being an adult was way harder than they thought, and that if they had another financial hardship today, their profile wouldn't be able to afford to eat.

Students were told, with great enthusiasm, that there was a question of raising the minimum wage in their district! In their folder, they would find Voter Information tailored to their profile, explaining whether their profile made more or less than minimum wage, and how a *yes* vote would impact them financially. For many who made less than minimum wage, they would be able to modify their budget to afford more necessities, but the higher-SES profiles who held political positions might have disadvantages because a *yes* vote might make many potential voters for their campaign unhappy with them. Students were encouraged to vote according to how their profile would vote.

First, a survey vote was taken. Each group cast a ballot. The average tended to have results of about five profiles voting *no* to raise the wage, and 15 profiles voting *yes*. Before the official vote was cast, students calculated the percentages of those results. Students then opened an *official ballot* envelope in their folder. Some had ballots in the envelope, but many (usually the yellow middle-SES and red low-SES folders) found a note telling them they could not vote that day. One profile couldn't vote because they had a felony charge, another was undocumented, another lived on an American Indian reservation and her address wasn't officially recognized. Students who could vote presented their ballots and received an *I Voted* sticker, much to the chagrin of non-voters (see Figure 9).



Figure 9: A Student Whose Profile Got to Vote Proudly Wears His Sticker.

When final ballots were counted, the results changed dramatically, sometimes even tipping in favor of not raising the wage. While the original vote tended to be about 5 no and 15 yes votes, the results for the official vote, with the restrictions, tended to be about 5 no and 4-6 yes votes. Many of the profiles who would have voted yes to improve their lives and financial standing had a higher likelihood that they had a restriction in voting in the first place.

Many students whose profiles would have benefited from increasing the minimum wage were exasperated that their profile was not permitted to vote. They shook their heads at the profiles that voted no, especially when students shared the reason their profile voted no was because they would only be able to afford one personal assistant instead of two, or it might affect their run for office.

Students calculated the percentages for the sparse voter turnout and used the remainder of the period to give side-eye looks to the stickered voters, while answering their final question on Google Keep: “Compare the two profiles you lived this past week. Summarize! Be specific about some numbers and reflect about the voting results.”

### What Did Students Do with This Experience and Information?

In class the following day, before moving on to the next phase, I admitted to students that the *Time Magazine* contest was a ruse (followed by a chorus of *I knew it!* and *Come ON!*). I hung up five contest submissions—one, colored with white crayon, looked blank; one aggressively scribbled with only a blue crayon; one that looked colorful and immaculate; one that had two clashing colors; and one that only had one color, but lots of interesting patterns—and invited students to examine them. “If you were to make an assumption as someone that didn’t know about the ‘limited crayons’ rule, which one seems like the person cared the most? The least?” This started a discussion about social inequities. I explained that the financial literacy unit gave them a first-hand look at what it means to have different opportunities. With this experiential orientation to wealth disparity, they were ready for the next step.

### What Do You Mean, What’s a “Zine”?

The cumulative project for the financial literacy unit was to complete a research project on a topic related to poverty of their choosing, and contribute to a collaborative classroom ‘zine. A ‘zine is a self-published, non-commercial, often handmade publication that can be about any topic. ‘Zines can be found everywhere, especially in political or punk scenes, and are usually produced on a photocopier, though they are found online as well. Historically, the easy-to-make and unique format helped spread and share the voices that were not always heard. To reflect each students’ individual voice, they could work within semi-strict guidelines for research, but have the freedom to make the format of their pages all their own.

Students researched their topics individually. Some students who chose the same topic collaborated in the sense of determining who might tackle the same element of that topic so there wasn’t redundancy, but all students took ownership of their own ‘zine pages. The goal for each student was to contribute their two pages for the class period’s ‘zine, resulting in five ‘zines all together.

Students had the freedom for how they presented the information on their topic. One of the best qualities of ‘zines is the unstructured presentation of information: students can type, handwrite, doodle, include photographs, present an argument, infographic, narrative, or on-paper speech. Students knew that if the root of their call to write was to inform, that a writer is obligated to present both sides of an argument, and that since their call to write was also to persuade, they might persuade the reader to take action.

After examining some real-life ‘zines to generate ideas, students had the freedom to format the pages on their own. One of the best qualities of ‘zines is the no rules presentation of information: students are afforded immense creative freedom.

Some of the topics that students researched were:

- free breakfast and lunch for all students
- raising minimum wage
- early childhood literacy
- loss of voting rights due to a felony charge
- homelessness in teens
- universal health care
- loan/credit policies
- the cognitive effects of poverty regarding education and nutrition
- affordable housing
- social/emotional skills
- what happens to pets during a financial crisis
- access to mental health resources for people living in poverty
- food stamps
- foster care
- money management
- the widening poverty gap

When students considered a research topic that interested them (and was usually a topic that one or both of their profiles had grappled with), they told me what they wished to research in order to prevent overlap and to connect students in collaboration. I kept a master document of each class's research topics, and also provided a list students could choose from (drawn from the experiences of the profiles) if they were unsure which topic to pursue.

After weeks of research, editing, feedback, and sending the originals to a local print shop, the 'zines were displayed at the local public library and online (see Figure 10). Each student received a copy. Readers who would like to see the PDFs of student work for the two years of the project can find them on the public Google Classroom using the code 6xnxux2.



Figure 10: Antonia Moore, Displaying 'Zines in the Front Lobby of the Library.

### Data, Data, Data!

One day as they engaged in research for their 'zines, I had students take a break in order to revisit the statements they considered prior to the start of this financial literacy unit. They used Plickers to again reconsider the same statements from before.

Since so many students were absent on the day I was collecting the post data (due to a field trip and time constraints), the results may look a lot different than if all of the students had been able to participate. I was able to look at individual students' responses on the Plickers data dashboard to see which students changed their thinking, stayed their original course, or were able to determine a *true/false* instead of an *unsure* response (see Figures 11 – 15). Most of the data I collected was informal, through conversations with individuals as they worked their way through the unit and their research. I posed the questions on Plickers for self-reflection more than for concrete data collection.

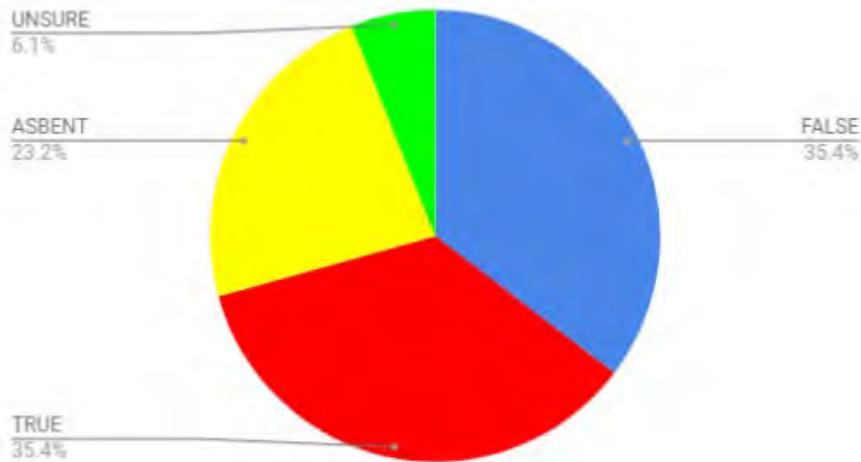


Figure 11: Post-Data: All people have equal potential to succeed.

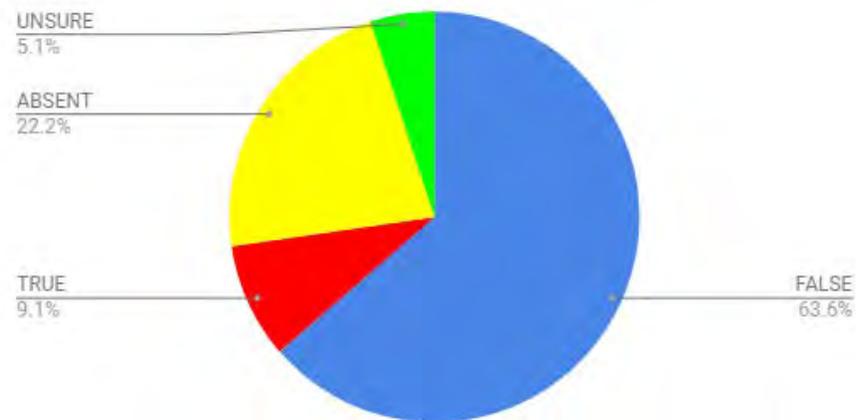


Figure 12: Post-Data: When someone isn't making enough to get by, it's usually because they're lazy.

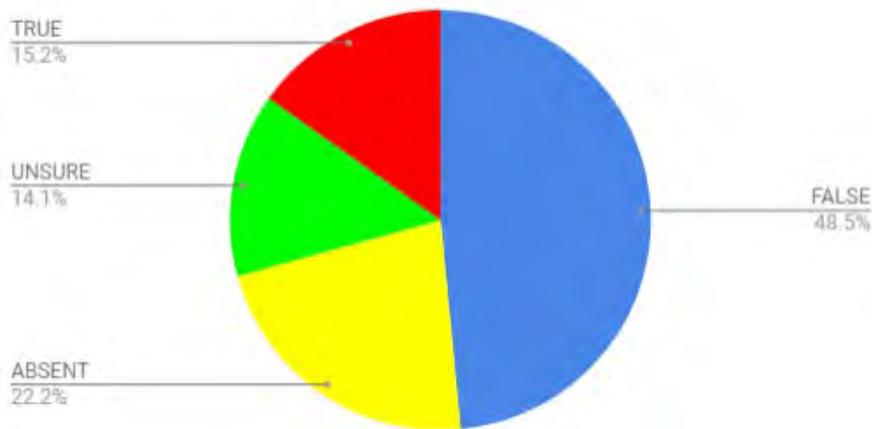


Figure 13: Post-Data: Helping people that are struggling will keep them from being able to help themselves.

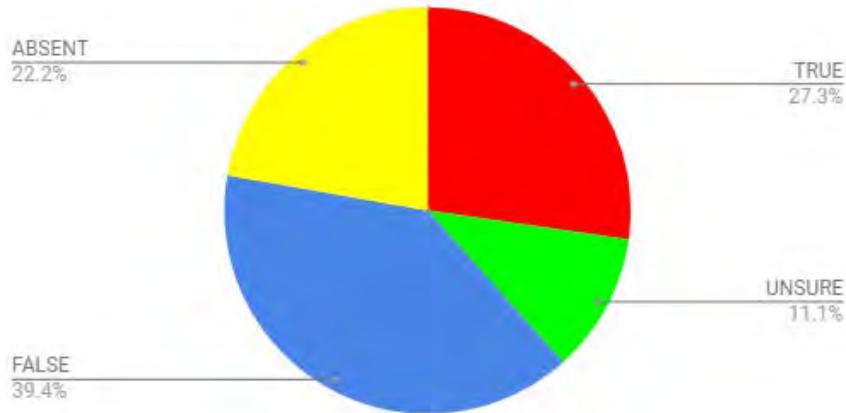


Figure 14: Post-Data: If someone isn't doing well somewhere, they should move.

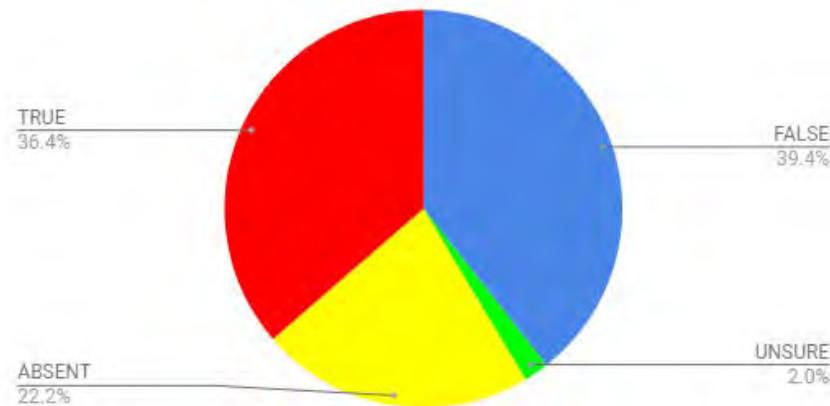


Figure 15: Post-Data: As long as people work hard enough, they can have what they need to live comfortably.

Many students who responded Unsure to some of the pre-data felt they could answer True or False with more certainty at the time of the post-data. Some reported changing their thinking about an initial answer once they experienced their profiles' hardships. While the pre- and post-data collected was valuable to encourage students to consider initial biases and how those biases changed over the course of the project, the informal, anecdotal data was even richer.

### The Final Portion of the Project: Reflection Videos

As a final reflection, students recorded a short video on Padlet answering the question, "When it comes to making the biggest change, who has the most power?" (see Figure 16).

\_\_\_\_\_/10

(See rubric in bottom margin for complete rubric breakdown)

Name: \_\_\_\_\_ Class Period: \_\_\_\_\_

**Financial Literacy/Zine Recap...Using Padlet!**

- Before you do anything else, open your Chromebook and type this into your taskbar:  
<https://padlet.com> \_\_\_\_\_
- Find Ms. Moore's example video in the top left corner and plug in your headphones to listen to her two - minute recap!
- You are going to be making a recap as well! First, you need to draft what you are going to say. Here are some helpful questions to get you thinking about what you are going to say in your recap:
 

- What is your first/last name, and your English class period?
  - What was the topic you chose to research for your zine page?
  - Why did you choose that topic?
  - What was it like living as two different profiles during the financial literacy unit? What did you learn? What surprised you/what was something you didn't expect?
  - What did you learn from your research regarding your topic?
  - What is something about this project that you think you will take with you after you leave the junior high school?
  - MAKE SURE TO ANSWER THIS QUESTION!**  
In order to make change, who has the most power?
- On the back of this paper, write a draft script of what you are going to say in your Padlet video!
- Then, go to the classroom Padlet, click on the "plus sign" in the bottom right corner. Title your post with first/last name, and class period. The "three dots" on that post has a "video" option!

\_\_\_\_\_/2 Name/Title  
\_\_\_\_\_/3 Recap is at least two minutes long  
\_\_\_\_\_/6 Recap is considered deeply, thorough, and addresses the suggested questions

Figure 16: Guidelines and Principles for Students' Individual Reflection Video.

Students drew upon everything they had researched, identifying their blind spots, touched on problems and action plans associated with a topic they were passionate about, and spoke with newfound compassion, conviction, and maturity. People can say what they will about eighth graders, but they are truly some of the most incredible people. The world is in good hands. With the openness and boldness with which they operated in this project, their natural curiosity also served as motivation to do important work, and share their thoughts.

Here are some of the reflections made in their videos:

- “Each and every one of us has the power to make change.”
- “I now know that not everyone gets the same chances. In order to make a change, those who do not need the minimum wage can vote to increase it for the bottom quarter of the workforce that needs it.”
- “I didn’t realize how expensive it was to live in poverty.”
- “In order to make the biggest change, I have to give a voice to the voiceless, because my voice can help them be heard.”

- “If an [undocumented person] or a convicted felon wanted to vote about something that could impact them, they would have to rely on someone with more social power to vote because they couldn’t.”
- “I think the people who have the most power are the people that don’t need the change to happen.”
- “I think those who have the most power to make a change are us kids, but people don’t take kids seriously.”
- “I think the best thing people can take away from a project like this is to be aware of the people around you.”

The best thing about this project was having an opportunity to work with the Math teacher to foster a community of spirited inquiry, collaboration, and empathetic reasoning that had real-life application and value. There are so many ways English and Math teachers can collaborate, and that isn’t always possible with the expectations of standardized testing preparation.

While it was still unclear what the school year would bring due to the COVID-19 crisis, many of the social issues that this unit brought to light were illuminated as the pandemic took shape. Approaching the next iteration of this unit with sensitivity to grief and trauma, I plan to perhaps modify or adapt some case studies to highlight more modern social issues that were seen or felt by some students as COVID-19 affected their lives.

One of the best ways to make this project even more authentic moving forward is to apply a variety of voices to shape a bigger worldview for my students. Included below is a list of literature I have considered incorporating concurrently with this project.

Chapter Books:

*The Benefits of Being an Octopus* by Ann Braden

*Fish in a Tree* by Lynda Mullaly Hunt

*New Kid* by Jerry Craft

*Free Lunch* by Rex Ogle

*Eleanor and Park* by Rainbow Rowell

*Money Hungry* by Sharon G. Flake

*Rural Voices: 15 Authors Challenge Assumptions About Small-Town America* by Nora S. Carpenter

Picture Books:

*The Last Stop on Market Street* by Matt de la Peña

*Shelter* by Céline Claire

*Those Shoes* by Maribeth Boelts

*A Bike Like Sergio's* by Maribeth Boelts

*A Chair for My Mother* by Vera Williams

*Maddie's Fridge* by Lois Brandt

*A Place to Stay* by Erin Gunti

Through this financial literacy project, I realized that by drawing students into the liminal space outside of their comfort zones, instead of giving up, they rose to the challenge, because they had a personal this-could-be-my-future investment in the skills they grappled with. It wasn't an easy project to design, but things worth doing tend to be the most complex. As the world and its circumstances change, this project will change with it.

What I loved most was having conversations with students about their writing, giving them a chance to put their authentic selves on the page, and have a positive, motivated experience in reading and writing. Students enjoyed having opportunities to learn about the world. They realized they didn't need to be given a voice because they had one all along; they just needed a reason to use it.

### Children's Literature References

Boelts, M. (2016). *Those shoes*. Candlewick.

Boelts, M. (2016). *A bike like Sergio's*. Candlewick.

Brandt, L. (2014). *Maddi's fridge*. Flashlight Press.

Brayden, A. (2018). *The benefits of being an octopus*. Sky Pony Press.

Carpenter, N. S. (2020). *Rural voices: 15 authors challenge assumptions about small-town America*. Candlewick.

Claire, C. (2017). *Shelter*. Kids Can Press.

Craft, J. (2019). *New kid*. Quill Tree.

de la Peña, M. (2015). *The last stop on Market Street*. Penguin.

Flake, S. G. (2009). *Money hungry*. Little, Brown.

Gunti, E. (2019). *A place to stay: A shelter story*. Barefoot Books.

Hunt, L. M. (2015). *Fish in a tree*. Penguin.

Ogle, R. (2019). *Free lunch*. Norton Young Readers.

Rowell, R. (2013). *Eleanor and Park*. St. Martin.

Williams, V. B. (1982). *A chair for my mother*. HarperCollins.

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Based on a work by Antonia Moore at [https://wowlit.org/on-line-publications/  
stories/volume-ix-issue-1/5/](https://wowlit.org/on-line-publications/stories/volume-ix-issue-1/5/).

## Using Math to Better Comprehend Picturebooks

Mary L. Fahrenbruck and Leanna Lucero

Classroom teachers value picturebooks that focus on mathematical concepts, functions and histories. They use literature and literacy strategies to teach students math signs and symbols and math story problems (Metsisto, 2005). Picturebooks like *Even Steven and Odd Todd* (Cristaldi, 1996) and *Fractions in Disguise: A Math Adventure* (Einhorn, 2014) focus directly on mathematical concepts and on “doing mathematics” (Modi, 2012). Other picturebooks like *The Doorbell Rang* (Hutchins, 1989) and *One Grain of Rice* (Demi, 1997) contain mathematical concepts and functions in a plot that provides students with engaging mathematical explorations that extend the story. Highlighting mathematics appears to be the purpose of some of these texts. As a result, these picturebooks and others with similar plots serve primarily as mathematical teaching tools with the story taking a secondary role.

We — Mary, a literacy instructor, and Leanna, a math instructor — acknowledge the valuable ways that literature with mathematical themes can help students better understand math concepts, functions and histories. Yet, we believe that mathematics can serve a more extensive purpose during reading transactions. We contend that readers can use math as a tool to help them comprehend a wider variety of texts including picturebooks of various genres.

In this article we introduce a guiding question that shifts the focus from *reading stories to learn mathematical concepts and functions* to *using math to better comprehend stories*. That is, we want students to use math to connect with characters and their thoughts, feelings and experiences. The guiding question we propose is *How can math help students better comprehend this story?* To illustrate how the guiding question might work with students, we feature five high quality picturebooks organized by grade level from kindergarten to fifth grade. We offer a lesson objective for each picturebook along with one or two grade level Common Core State Standards (CCSS) for math (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). We close each section with a discussion about how math can help students better comprehend the story.

### Picturebooks for K-5 Classrooms

The picturebooks featured in this section contain thought provoking stories with which students will want to engage. The characters are diverse in age, gender, race, and socio-economic status. The settings are diverse as well, from rural to urban and national to international. Despite being matched to a specific grade level in order to illustrate the guiding question, we think students of all ages and grade levels will connect with each of these picturebooks.

We suggest that teachers first read aloud to students one of these featured picturebooks. Students should hear or read the story in its entirety before they engage in the lessons.

**Kindergarten: Last Stop on Market Street (Matt de la Peña, 2015)**

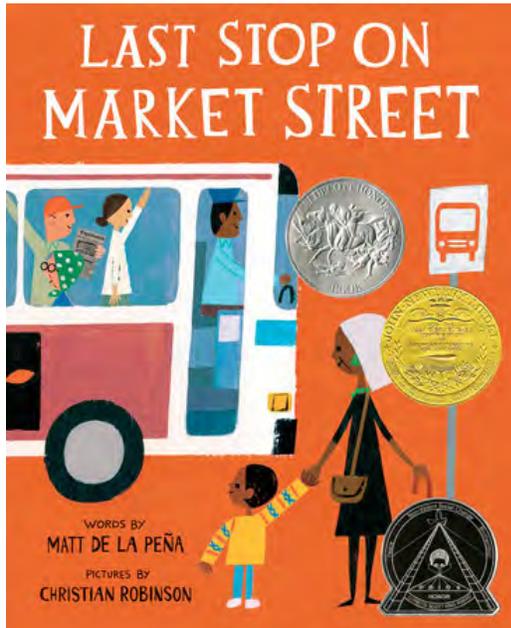


Figure 1. Front cover of *Last Stop on Market Street*.

Every Sunday after attending church, CJ and Nana ride the city bus to the last stop on Market Street. Today, CJ seems more aware of his circumstances and surroundings. CJ asks Nana why others appear more fortunate than them. Nana lovingly points out the blessings they have in their lives. By the end of the story students learn that CJ and Nana are headed to Market Street to help those less fortunate than themselves.

**Lesson Objective**

Christian Robinson's flat illustrations remind us of those by Ezra Jack Keats. The shapes in the cityscapes and on the bus are pronounced and obvious, ready for kindergartners to identify. We suggest the following objectives for this story. By the end of this lesson, kindergarten students will be able to:

1. Identify at least four different shapes Robinson uses to create objects in the illustrations from *Last Stop on Market Street*.
2. Name at least four shapes in the classroom environment and recreate the objects using geoboards on iPads or by drawing the objects with pencil on paper.
3. Draw at least four objects in a whole class mural featuring people, places, or things that make the classroom, school and community a special place to live and learn.

**CCSS for Math**

Most educators must connect their lessons to the CCSS. For the objectives listed above we suggest the following Kindergarten Math CCSS.

1. Identify and describe shapes.

a. CCSS.Math.Content.K.G.A.1

Describe objects in the environment using names of shapes...

b. CCSS.Math.Content.K.G.A.2

Correctly name shapes regardless of their orientations or overall size.

2. Analyze, compare, create, and compose shapes.

a. CCSS.Math.Content.K.G.B.5

Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

b. CCSS.Math.Content.K.G.B.6

Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”

**How Math Helps Students Better Comprehend *Last Stop on Market Street***

Inviting students to focus on shapes in the illustrations draws their attention to the cityscape as if they were riding on the bus with CJ and Nana. Students can connect with CJ when they see what CJ points out to Nana. They can also extend the story by noticing people, places and things CJ did not point out. Teachers help students make authentic connections when they invite students to notice shapes and objects in their classroom, school and community environment.

**First Grade: *Thank You, Jackson* (Niki Daly, 2015)**

Each morning, Jackson the donkey carries the farmer’s vegetables up a hill to the market “without complaint or rest”. On this day, Jackson unexpectedly stops halfway up the hill. The farmer tries to push and then to pull Jackson up the hill. Instead of moving forward, Jackson sits down causing the vegetables to roll out of the baskets and onto the ground. Furious, the farmer threatens to hit Jackson with a stick if Jackson doesn’t move. Just as the farmer is about to strike the donkey, Goodwill, the farmer’s son, intercedes.

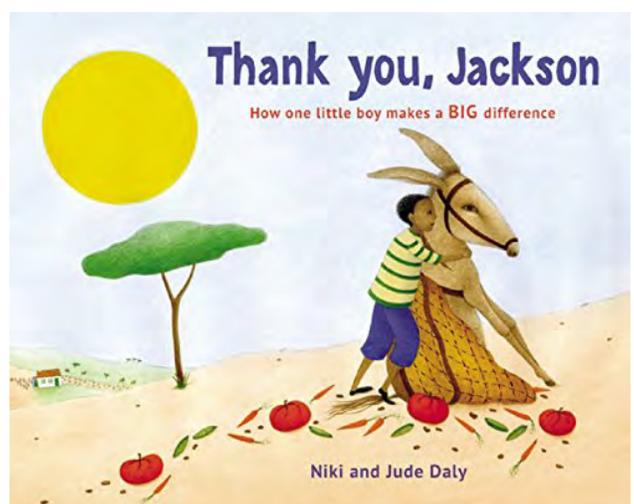


Figure 2. Front cover of *Thank you, Jackson*.

Goodwill whispers softly into Jackson's ear and the Donkey gets up, ready to carry the vegetables up the hill to the market. The farmer learns that Goodwill whispered the magic words, *please* and *thank you*, to Jackson.

### Lesson Objective

Jude Daly's illustrations show baskets filled to the rim with vegetables. Donkeys can carry approximately 150 pounds of weight on their backs. Is it possible that the baskets are too heavy for Jackson to carry, especially uphill to market? We suggest the following objectives for this story. By the end of this lesson, first grade students will be able to:

1. Identify the type and amount of each vegetable Jackson is carrying to market by examining the illustrations in *Thank you, Jackson*.
2. Calculate the weight in pounds of the vegetables in the baskets Jackson is carrying to market to determine if the baskets of vegetables are too heavy for him to safely carry.

### CCSS for Math

For the objectives listed above we suggest the following first grade Math CCSS:

1. Represent and solve problems involving addition and subtraction.

- a. CCSS.Math.Content.1.OA.A.1

Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

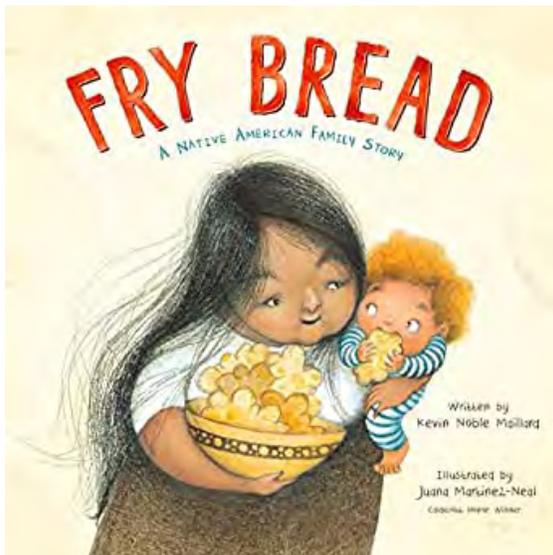
2. Use place value understanding and properties of operations to add and subtract.

- a. CCSS.Math.Content.1.NBT.C.4

Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

l , l Å . / Ò r  
b r Å<sup>r</sup>  
Ò r

**Second Grade: Fry Bread. A Native American Family Story (Kevin Noble Maillard, 2019)**



Fry bread is... shape, ... sound, ... color. *Fry Bread* is 17 short poems that describe the experiences of making fry bread. But Maillard doesn't stop there. His poems and Author's Note call attention to the significance of fry bread, placing it at the intersection of Native culture and community, and the colonizing forces that attempt(ed) to "weaken tribal governments, fracture Indigenous communities, and forcibly take ancestral lands". Reviewers list the target audience at 3-6-year-olds. However, *Fry Bread* is appropriate for all age groups because of Maillard's willingness to call attention to the origins of fry bread.

Figure 3. Front cover of *Fry Bread*.

**Lesson Objective**

Maillard includes his Seminole family's fry bread recipe in the Author's Note. The ingredients—corn meal, dry yeast, coconut oil—differ from other fry bread recipes that call for flour, powdered milk and baking powder. Students can make different types of fry bread starting with Maillard's recipe. The recipe will most likely need to be doubled or tripled depending on the number of students in class. We suggest the following objective for this lesson. By the end of this lesson, second grade students will be able to:

1. Double or triple the amount of each ingredient to make more than one batch of fry bread from the recipe in *Fry Bread*.

## CCSS for Math

For the objectives listed above we suggest the following second grade Math CCSS:

1. Represent and solve problems involving addition and subtraction.

a. CCSS.Math.Content.2.OA.A.1

Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

## How Math Helps Students Better Comprehend Fry Bread

Students might not realize that bread consists of different ingredients that have been measured and mixed together. Teachers who invite students to measure and mix different ingredients create a shared experience between them and the characters in the picturebook who also make Fry Bread. To expand the lesson, teachers can explain that bread symbolizes sharing, unity and friendship.

## Third Grade: Pancho Rabbit and the Coyote: A Migrant's Tale (Duncan Tonatiuh, 2013)

When Pancho Rabbit's Papá doesn't return from his job in El Norte, Pancho sets out to find him. With the help of Coyote, Pancho rides on top of a train, floats across a river, climbs through a tunnel and walks under the hot desert sun in his attempt to get closer to his Papá. Pancho must give his food and drink to Coyote as payment for his help so when they arrive at a hut in the desert, Pancho is tired, hungry and thirsty. An evil, hungry Coyote is no match for a tired, hungry and thirsty little rabbit. How will Pancho survive the evening with Coyote?

### Lesson Objective

Tonatiuh's unique illustrations depict various scenes from Pancho Rabbit's travels to El Norte. Students with background knowledge about migrants' journeys from Central America can comprehend the great distance Pancho most likely traveled. However, young students might not be aware of this distance. To help them better understand the distance Pancho traveled, we suggest the following objective. By the end of the lesson, third grade students will be able to:

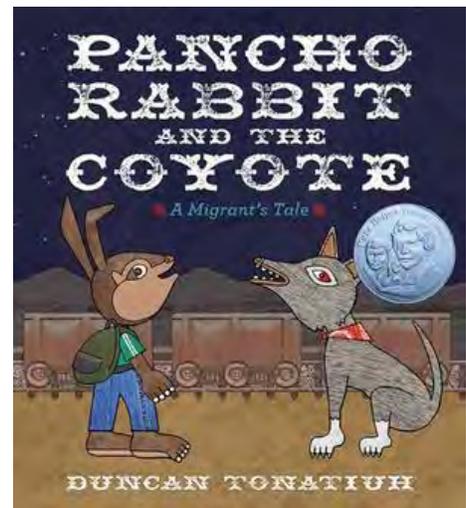


Figure 4. Front cover of *Pancho Rabbit and the Coyote*.

1. Measure distance on a map using mathematical concepts such as a map scale and a ruler to calculate the distance Pancho and the Coyote traveled from Central America to El Norte in the book *Pancho Rabbit and the Coyote*.

### CCSS for Math

For the objectives listed above we suggest the following third grade Math CCSS:

1. Use place value understanding and properties of operations to perform multi-digit arithmetic.

- a. CCSS.MATH.CONTENT.3.NBT.A.2

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

2. Represent and interpret data.

- a. CCSS.MATH.CONTENT.3.MD.B.4

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.

### How Math Helps Students Better Comprehend *Pancho Rabbit and the Coyote*

Inviting students to calculate that migrants from Central America travel over 2000 miles, a trip that can take up to 3 months traveling on foot, will help students empathize with Pancho Rabbit. They will understand how desperate Pancho is to find his Papá and how tired he is sitting in the hut at the end of the story. This math lesson will also help students better understand the long and dangerous journey many immigrants take with hopes for a better life in the United States.

**Fourth Grade: *The World's Poorest President Speaks Out* (Yoshimi Kusaba, 2020)**

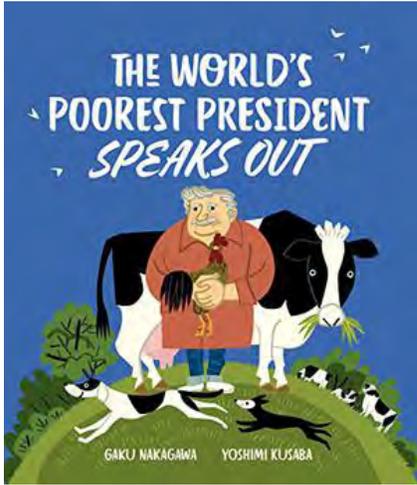


Figure 5. Front cover of *The World's Poorest President Speaks Out*.

Uruguayan president José Mujica delivered a powerful speech to leaders from 192 United Nations member states at the 2012 UN Conference on Sustainable Development in Rio de Janeiro, Brazil. President Mujica called for “economic growth and progress [that] add to human happiness, not take away from it”.

President Mujica, affectionately called “Pepe” by the people of Uruguay, lives a modest life that focuses on human happiness. When he was president, Pepe continued to live on a small farm with his wife and a few animals instead of at the Presidential Palace in Montevideo. Pepe donated 90% of his presidential salary to small businesses and to organizations that help those living in poverty. Pepe Mujica’s modest lifestyle earned him the nickname, the World’s Poorest President.

**Lesson Objective**

Leaders from the 192 United Nations’ member states cheered long and loud after Pepe’s speech at the 2012 UN Conference on Sustainable Development. If each leader returned to their home country and shared his message, Pepe’s call to action had the potential to impact millions, perhaps even billions, of global citizens. Students might not be aware of this possibility. To help them better understand the number of people Pepe possibly impacted, we suggest the following objectives. By the end of this lesson, fourth grade students will be able to:

1. Determine the population of each country represented at the UN Conference on Sustainable Development who would hear President Jose Mujica’s message via the UN leader of their country.
2. Calculate the total population of global citizens who could have potentially heard President Mujica’s message as told to them through the UN leader of their country.

### CCSS for Math

For the objectives listed above we suggest the following fourth grade Math CCSS:

1. Generalize place value understanding for multi-digit whole numbers.

a. CCSS.Math.Content.4.NBT.A.3

Use place value understanding to round multi-digit whole numbers to any place.

2. Use place value understanding and properties of operations to perform multi-digit arithmetic.

a. CCSS.Math.Content.4.NBT.B.4

Fluently add and subtract multi-digit whole numbers using the standard algorithm.

### How Math Helps Students Better Comprehend *The World's Poorest President Speaks Out*

President Mujica's speech is like a pebble dropped into a pond. Each ripple represents a UN leader who can share Mujica's call to action for the change the world needs. By calculating the population of each country and then adding the populations to determine a grand total of people, teachers help students realize how a single action, Mujica's speech or their own, can impact the world.

### Fifth Grade: *The Cat Man of Aleppo* (Irene Latham & Karim Shamsi-Basha, 2020)

Mahammad Alaa Aljaleel loves everything about Aleppo; the sights, the sounds, the smells, and most of all, the people. Alaa's love for the people and the city motivate him to continue working as an ambulance driver even after war comes to Aleppo. Many people flee Aleppo seeking safety from fighting, taking only necessities with them. Alaa notices that many cats have been left behind. The cats are lonely, confused and hungry. Alaa wants to help the cats so he begins to collect money and buy food for the animals. Soon Alaa is feeding more and more cats every day, and he becomes known as the cat man of Aleppo. Word travels around the world about Alaa's kindness and donations begin to come in so that Alaa can provide not only food for abandoned animals, but medical care as well. Though his work is not easy, Alaa continues to take care of abandoned animals in war-torn Aleppo thanks to donations from caring people all around the world.

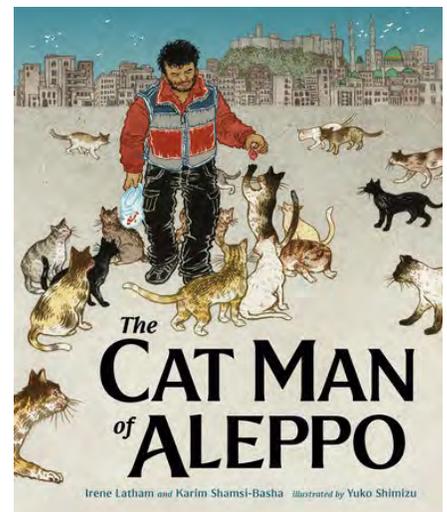


Figure 6. Front cover of *The Cat Man of Aleppo*.

### Lesson Objective

Shimizu's illustrations show Alaa feeding hundreds of cats. A check of Alaa's Facebook page at the time of this writing revealed that there are 170 cats in his care. The amount and the cost of food for each cat is not mentioned in the story. To understand the enormity of Alaa's work feeding 170 cats each day, we suggest the following objectives for this story. By the end of this lesson, fifth grade students will be able to:

1. Determine how much food a 5-10lb cat eats each day.
2. Calculate the amount of food Alaa would need to feed 170 5-10lb cats each day.
3. Calculate the cost in dollars and cents of a single serving of cat food.
4. Calculate the total cost in dollars and cents of the cat food Alaa must purchase to feed 170 cats for one day; for one week; for one month.

### CCSS for Math

For the objectives listed above we suggest the following fifth grade Math CCSS:

1. Perform operations with multi-digit whole numbers and with decimals to hundredths.

- a. CCSS.Math.Content.5.NBT.B.5

Fluently multiply multi-digit whole numbers using the standard algorithm.

2. Apply and extend previous understandings of multiplication and division.

- a. CCSS.Math.Content.5.NF.B.6

Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

- b. CSS.Math.Content.5.NF.B.7.c

Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.

### How Math Helps Students Better Comprehend *The Cat Man of Aleppo*

Many students have experiences feeding and caring for a family pet. However, they may not be able to grasp the enormity of Alaa's task of feeding the cats. Teachers who help students

calculate the amount of cat food needed along with the cost of the food shed light on the logistics of Alaa's work of purchasing and distributing food to the cats in his care.

### **Getting Started in the Classroom**

Shifting one's thinking about math as a separate and distinct subject (discipline oriented) to thinking about math as a learning tool for enhancing comprehension (utility oriented) can be difficult at first. To help teachers get started in their classrooms, we offer three suggestions about text selection, determining a focus and framing the lesson.

### **Selecting a Picturebook**

Readers will notice that in these examples, we intentionally feature picturebooks with social justice themes like poverty, colonization, immigration and consequences of war. Each picturebook contains a relevant theme that resonates with students and can be explored using mathematical concepts and functions. We suggest teachers choose a picturebook with themes that the students in their classrooms care about and will want to investigate further. Teachers can use the Advanced Search (<https://wowlit.org/catalog/search/>) feature to search the Worlds of Words database by theme and websites like StoryTrail (<https://storytrail.com/>) as a first step.

### **Determining a Focus**

Most picturebooks have many layers of meaning throughout the narrative and the illustrations. Teachers might have difficulty choosing a focus for their math investigation. We want to reiterate our suggestion that teachers begin by reading aloud the entire picturebook they select at least once to the students. As teachers read, they should listen to the comments and questions the students share. We have found that our most successful lessons resulted from students' inquiries shared during the read aloud.

### **The Guiding Question**

Even though each math exploration we feature aligns with a grade level CCSS, the guiding question, *How can math better help us comprehend this story?* frames each lesson. The question directs the planning development, from the lesson objective, to the instructional process, to the final lesson assessment. We suggest teachers keep the guiding question at the forefront of the lesson planning process.

## Final Thoughts

We think planning lessons with the guiding question is straightforward and worth the time. Using math as a comprehension tool will most likely be a new way of thinking for teachers. Even so, we hope the picturebook examples in this article provide teachers with an entry point into this way of thinking about math.

## Children's Literature References

- Cristaldi, K. (1996). *Even Steven and Odd Todd* (H. Morehouse, illus.). Scholastic.
- Daly, N. (2015). *Thank you, Jackson* (J. Daly, illus.). London: Frances Lincoln.
- de la Peña, M. (2015). *Last stop on Market Street* (C. Robinson, illus.). Putnam's.
- Demi (1997). *One grain of rice*. Scholastic.
- Einhorn, E. (2014). *Fractions in disguise: A math adventure* (D. Clark, illus.). Charlesbridge.
- Hutchins, P. (1989). *The doorbell rang*. Greenwillow Books.
- Latham, I., & Shamsi-Basha, K. (2020). *The cat man of Aleppo* (Y. Shimizu, illus.). Putnam's.
- Maillard, K. N. (2019). *Fry Bread. A Native American family story* (J. Martinez-Neal, illus.). Roaring Brook Press.
- Tonatiuh, D. (2013). *Pancho Rabbit and the coyote: A migrant's tale*. Abrams.
- Yoshimi, K. (2020). *The world's poorest president speaks out* (G. Nakagawa, illus., A. Wong, trans.). Enchanted Lion Press.

## References

- National Governors Association Center for Best Practices, Council of Chief State School Officers (2010). *Common Core State Standards for Math*. National Governors Association Center for Best Practices, Council of Chief State School Officers, Washington D.C.
- Metsisto, D. (2005). Reading in the mathematics classroom. In J. M. Kenney, E. Hancewicz, L. Heuer, D. Metsisto, & C. L. Tuttle (Eds.), *Literacy strategies for improving mathematics instruction* (9-23). Alexandria: Association for Supervision and Curriculum Development.
- Modi, K. (2012). Story telling in mathematics. *Voices of Research*. 1(2), 31-33.

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## Embedded Classrooms, Culturally Sustaining Pedagogy, and Growing Early Childhood Literacy Educators

Julia López-Robertson, Jennifer D. Morrison, India Grady, Joan Morgan, and DeAnna Savage

We are two classroom teachers (India, first grade and Joan, fifth grade), an assistant principal (DeAnna), and two university faculty members (Julia and Jennifer) from the University of South Carolina. Together we form the Professional Development team at Pontiac Elementary School. As members of the National Association of Professional Development Schools (NAPDS) network, our school-university partnership is committed to the preparation of future educators who embrace their active engagement in the school community. As such, we actively engage preservice teachers in working within classrooms with teachers and students.

### Professional Development School Partnership

The figure below (Figure 1) explains the relational nature of our partnership; the PDS partnership provides the opportunity to support preservice teachers and classroom teachers with resources from the university. The embedded coursework provides fluidity between coursework and the actual work of teaching, with the ECE literacy methods courses focused on culturally sustaining pedagogy as enacted through multicultural and multilingual picturebooks. The focus of this vignette is the embedded literacy methods course and culturally sustaining pedagogical practices taught through the use of picturebooks.

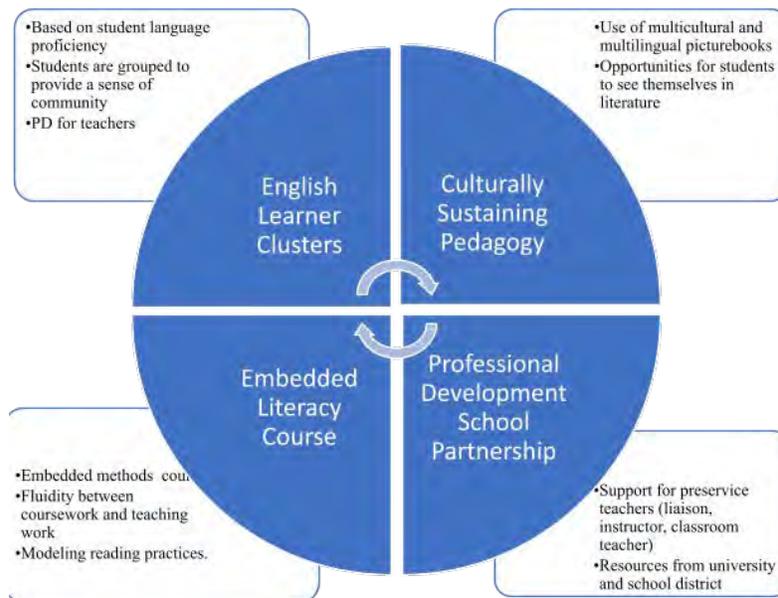


Figure 1. PDS Partnership

### **English Learner Clusters**

Pontiac Elementary serves approximately 700 students in PreK-5 with demographics as follows: 67% receive free/reduced lunch, 18% are identified as White, 2% Asian, 58% Black or African American, 5% two or more races, and 15% Hispanic/Latinx. In the fall of 2018, Pontiac initiated clusters to better serve children who are English Learners (EL). The clusters, based on student language proficiency, group ELs in classrooms to provide them with a sense of community, assign no more than 50% of ELs in one class, and offer PD and support for teachers. Mrs. Grady and Mrs. Morgan teach first and fifth grade in the EL cluster.

### **Embedded Literacy Course**

As a part of an embedded literacy course, we offer preservice teachers (PST) a context for understanding the link between theory and practice (Zeichner, 2010), which is particularly important when working with diverse student populations. Course goals include developing understandings about theory and practice in literacy education by focusing on the teaching and learning of reading by developing, implementing, and evaluating lesson plans to support young children's literacy learning and develop supportive classroom environments and practices for young children (birth through age eight) as readers across linguistic and cultural communities.

Preservice teachers were paired with students from Mrs. Grady's and Mrs. Morgan's classes. PSTs created standards-based lessons and engaged the children in one-to-one lessons for 45 minutes weekly where they "examined a practice, observed examples of the practice in action, tried it out, and with feedback reflected upon their enactment of practice," which informed their teaching (Dubetz & Collette, 2020, p. 2). While the PSTs were working with the children, Jennifer and Julia walked around and observed, took notes, and sometimes engaged with the students in the lessons. A whole group sharing time ended our time together after which the children returned to their classrooms, and the preservice teachers debriefed with Jennifer and Julia. The debriefing provided real-time feedback which positively impacted lesson planning by PSTs and enhanced their understanding of the connection between theory and practice. It also allowed PSTs to ask questions and receive guidance immediately at point of use.

### **Culturally Sustaining Pedagogy**

We share a belief in a culturally sustaining pedagogy (Paris & Alim, 2014) where schools must locate the "linguistic, literate, and cultural practices of working-class communities—specifically poor communities of color—as resources and assets to honor, explore, and extend" (p. 87) and enact these practices through explorations and reiterative engagements with multicultural and multilingual picturebooks with preservice teachers and children.

A few weeks into the semester, while reviewing lesson plans and field notes taken during observations of the PSTs teaching, Julia noticed the book selections PSTs were overwhelmingly choosing familiar books they loved as children such as *If You Give a Moose a Muffin* (Numeroff, 1991) and *The Very Hungry Caterpillar* (Carle, 1994). This was the first time the PSTs were responsible for creating and implementing lessons, and, understandably, they selected books they knew. Julia spoke with Jennifer, and they decided to focus the next debriefing on book selection. However, rather than tell the PSTs that they needed to alter their book selection, Julia asked the PSTs to gather their lesson plans and fill out a Book Selection Analysis form (Figure 2).

Gather your lesson plans and fill out the information below.

- List the title & author of ALL the books I have used:
- Setting of the stories:
- List the main characters in each book:
- List the secondary characters in the books:
- Are the characters in the book people or animals?
- Note the demographics of the characters: gender, language, culture, race, age, ability?
- What do you notice?

Figure 2. Book Selection Analysis.

Once the PST completed their forms, they paired up and talked about what they noticed in their individual analysis. We then gathered for a whole class discussion. PSTs were surprised to find they were choosing similar titles and their heavy reliance on Dr. Suess, Eric Carle, and the *Purplicious* (Kann & Kann, 2007) series. At this time, Julia showed the graphic from the Cooperative Children’s Book Center, Diversity in Children’s Books 2018, (Figure 3) that notes the percentage of books depicting characters from diverse backgrounds. Of the 3134 books published in the United States in 2018, 50% depicted White and 27% were about animals. The remaining 23% of books were divided as follows; 10% of books reflected African American 7%; Asian Pacific Islander/Asian Pacific American; 5% Latinx, and 1% American Indian/First Nations. PSTs were surprised that “there are more books about animals than there are about people of color!” They were also surprised that their book selection closely reflected the graphic.

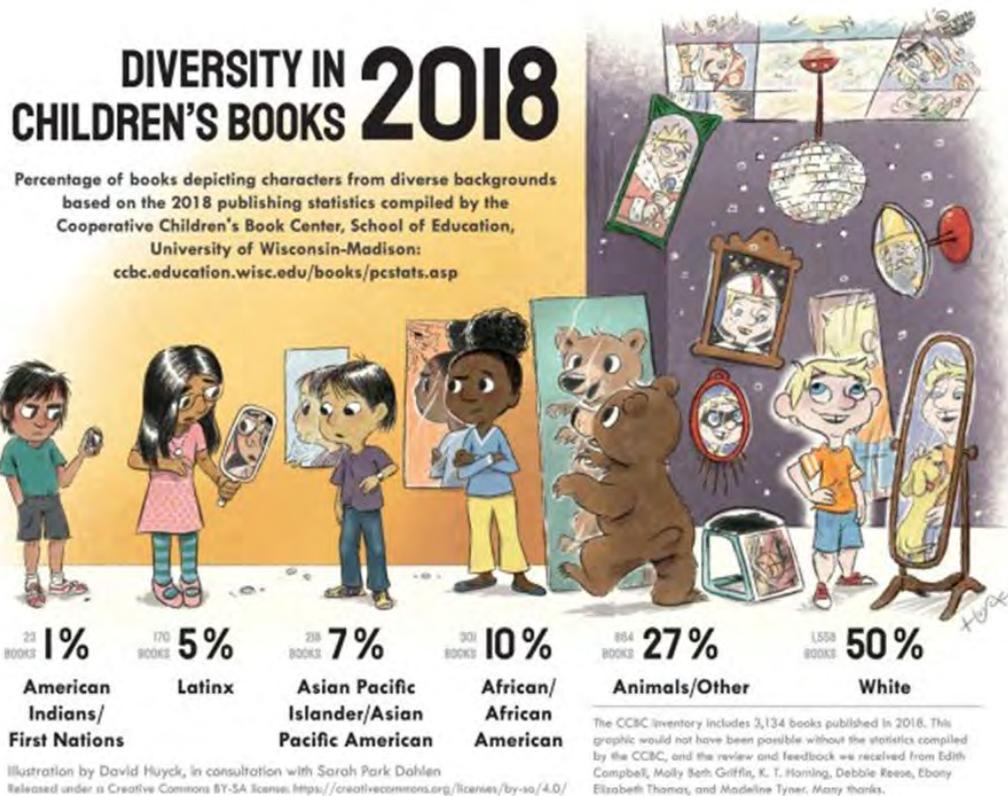


Figure 3. Diversity in Children's books (Huyck & Dahlen, 2019).

And then COVID came along...

Our semester was cut short due to COVID, but as we continued to work with the children through video lessons, the PSTs sought out books that were multilingual and/or culturally diverse. Several of the PSTs even chose bilingual books—written in English and Spanish—and read them in Spanish to the children. During one of the online class meetings, Julia introduced the PSTs to a few websites that provided support with book selection; for example the Cooperative Children's Book Center Recommended Book Search (<https://ccbc.education.wisc.edu/recommended-books/>), Worlds of Words (<https://wowlit.org/links/booklists/>), and Epic books for kids. PSTs worked in small groups to explore the websites and search for books upon which they based their video lessons. Some of the titles they selected were *What Can You Do with a Rebozo?/¿Qué puedes hacer con un rebozo?* (Tafolla, 2009); *What can you do with a Paleta?/¿Qué Puedes Hacer con una Paleta?* (Tafolla, 2014) and *I Love Saturdays y domingos* (Ada, 2004). PSTs talked about how nervous they felt in making mistakes in pronunciation and connected this with the way English Learners often feel in school. One PST shared that she had gone on to Epic.com and listened to the read aloud of *The Cazuela that the Farm Maiden Stirred* (Vamos, 2013) because she wanted to “hear the way the words sounded in Spanish so that I wouldn't sound too strange to my Amiguito.”

Asking the PSTs to do the Book Selection Analysis rather than tell them about their book selection provided them with the opportunity to see for themselves the choices they were making when it came time to select picturebooks and the subsequent possible impacts of those choices. Their engaging in the work meant more to them than being told they were missing representations of entire populations of children.

Our work as a PDS Partnership provides PSTs with the opportunity to work with children while being supported by university instructors and classroom teachers and to receive immediate feedback on their teaching. The partnership offers children the opportunities to share their learning and to strengthen their ELA strategies and skills while working individually with a PST who is able to personalize their learning experiences.

### Children's Literature Cited

Ada, A. F. (2004). *I love Saturdays y domingos* (E. Savadier, illus.). Atheneum.

Carle, E. (1994). *The very hungry caterpillar*. World of Eric Carle.

Kann, V., & Kann, E. (2007). *Purplicious* (V. Kann, illus.). HarperCollins.

Numeroff, L. (1991). *If you give a moose a muffin* (F. Bond, illus.). HarperCollins.

Tafolla, C. (2009). *What can you do with a paleta?/¿Qué puedes hacer con una paleta?* (M. Morales, illus.). Dragonfly Books.

Tafolla, C. (2009). *What can you do with a rebozo?/¿Qué puedes hacer con un rebozo?* (M. Morales, illus.). Dragonfly Books.

Vamos, S. R. (2013). *The Cazuela that the farm maiden stirred* (R. López, illus.). Charlesbridge.

### References

Cooperative Children's Book Center (n.d.). *Books by and/or about Black, Indigenous and People of Color 2018*-. <https://ccbc.education.wisc.edu/literature-resources/ccbc-diversity-statistics/books-by-and-or-about-poc-2018/>.

Cooperative Children's Book Center (n.d.). *CCBC-Recommended Book Search*. <https://ccbc.education.wisc.edu/recommended-books/>.

Dubetz, N., & Collett, J. (2020). Studying program effectiveness in preparing teachers for English Learners. *Action in Teacher Education*, 42(3), 190-211.

Huyck, David and Sarah Park Dahlen. (2019 June 19). Diversity in Children's Books 2018. sarahpark.com blog. Created in consultation with Edith Campbell, Molly Beth Griffin, K. T. Horning, Debbie Reese, Ebony Elizabeth Thomas, and Madeline Tyner, with statistics compiled by the Cooperative Children's Book Center, School of Education, University of Wisconsin-Madison: <https://ccbc.education.wisc.edu/literature-resources/ccbc-diversity-statistics/books-by-about-poc-fnn/>. Retrieved from <https://readingspark.wordpress.com/2019/06/19/picture-this-diversity-in-childrens-books-2018-infographic/>.

Paris, D., & Alim, H.S. (2017). *Culturally sustaining pedagogies: Teaching and learning for justice in a changing world*. Teachers College Press.

Worlds of Words (n.d.). *World of Words Booklists*. <https://wowlit.org/links/booklists/>.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 61(1-2), 89-99.

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