

BY ALEXA SCHINDEL AND SARA TOLBERT

EBOLA:

Teaching Science, Race, and the Media



The Ebola Watch Committee in Bamala Commune in Macenta, Guinea.

Alexa Schindel is a teacher educator at the University at Buffalo and works with high school science teachers and their students on environmental justice issues and civic action.

Sara Tolbert is an assistant professor of science education at the University of Arizona and a former secondary science teacher. Her work focuses on exploring how teachers and students can engage with local and global justice issues in science classrooms.

Media plays a pivotal role in both informing and misinforming the public. What (and whose) stories are told, and how they are told, matter. In terms of science news, it is particularly important that students develop the ability to critically analyze the scientific content: Is it accurate? Is the guise of objectivity being used to present racism or other biases as scientific fact?



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In 2014, the death toll from an outbreak of the Ebola virus in Liberia, Sierra Leone, and Guinea soared. In the United States, news outlets reacted with racist and fearmongering reports focused on potential outbreaks in the United States.

Our preservice teachers reported that students at their field placements were asking lots of questions about Eb-

ola: What is it? Is it coming here? Am I going to catch it? One preservice teacher observed a conversation in a high school science class. A student asked, “Don’t Africans eat bugs?” Her teacher replied, “They’re hunters and gatherers.”

These comments are all too common in schools and demonstrate how, even among scientists and science

teachers, scientific topics can be polluted with ignorance and anti-African/anti-Black attitudes that reproduce racist and colonialist norms, a process often referred to as “othering.” The racist thinking that underlies the supposed objectivity of Western science stems back as far as Carl Linnaeus, who developed the system we use today for classifying organisms. He classified human beings into racialized categories, assigning those with European origins more “civilized” personality traits and those with African or AmerIndian origins more “savage” traits. In 20th-century science in the United States, the conflation of othering and science led to the Tuskegee project, in which hundreds of Black men and their families were lied to and denied treatment for syphilis for four decades, and the testing of birth control pills on women in Puerto Rico without informed consent, to name just two examples.

In terms of the Ebola epidemic, we particularly wanted to help our students explore the role of the media. As journalist Stassa Edwards wrote about the racist panic:

African illness is represented as a suffering child, debased in its own disease-ridden waste; like the continent, it is infantile, dirty, and primitive. Yet when the same disease is graphed onto the bodies of Americans and Europeans, it morphs into a heroic narrative: one of bold doctors and priests struck down, of experimental serums, of hazmat suits and the mastery of modern technology over contaminating, foreign disease.¹

Teaching Science, Facing Bias

Science educators schooled in the dominant thinking that science is objective and free from the cultural and ideological contexts of the larger society may not be aware of how much our scientific “truths” are based on colonial perspectives—or be prepared to help their students unpack that bias.

This prompted us to consider how we, as teacher educators, could develop anti-oppressive, anti-colonial curriculum that would help our preservice students see these realities and analyze the role of media in perpetuating bias in the name of science.

We collaboratively designed a lesson in which we presented the concept of othering within an understanding of how disease transmission works. We hoped that this would allow our students—preservice elementary teachers at the University at Buffalo, where Alexa teaches, and at the University of Arizona, where Sara teaches—to question how racialized public discourse about diseases, such as that found within news media, portrays “the West” as clean and powerful and African countries as dirty and powerless, and how this reproduces racist and colonial ideologies that are used to justify the continued exploitation of “underdeveloped” or “non-Western” peoples and regions of the world. We had three goals for our students:

1. To better understand viral disease transmission, including how it differs from one disease to another.
2. To critique racism, colonialism, and othering in the news media.
3. To apply these understandings within a creative project.

Our two courses focused on different subjects—Alexa taught a social studies methods course and Sara taught a bilingual science methods course. We viewed

our differing contexts as an opportunity to take advantage of the often under-addressed connections between science and social issues. Our students’ demographic and racial/ethnic backgrounds were varied: Sara’s students were all female and predominantly Latina (13 Latina, three white), whereas Alexa’s students were majority female (15 females, two males) and predominantly white (12 white, four African American, one Latina). Working on the same issue but in different contexts provided us with an opportunity for collaborative reflection on the topic and on our teaching practice. The two of us met weekly for several weeks prior to teaching the Ebola lesson to discuss the big ideas we hoped our students would take away from the course session, identify relevant resources, and construct a lesson plan, which we organized around a driving question: How do racism and colonialism, as othering, play into public understandings of science issues?

We asked students to prepare for class by reading three articles: “Smuggled Bushmeat Is Ebola’s Back Door to America,” a *Newsweek* cover story filled with misconceptions about the spread of Ebola and a potential U.S. outbreak²; “The Long and Ugly Tradition of Treating Africa as a Dirty, Diseased Place,” a *Washington Post* blog response that deconstructs the arguments in the first article³; and “I Didn’t Know There Were Cities in Africa,” a *Teaching Tolerance* article that confronts misleading racist stereotypes about Africa, including seeing Africa as a country rather than a continent and disregarding its great diversity of traditions, cultural practices, languages, histories, and urban and rural lifestyles.⁴

We began class by asking students to complete a quick-write and then participate in a small-group discussion in response to the prompt: “What is a virus and how is it transmitted?” Students in both classes seemed challenged by the prompt. One responded: “Viruses are not my thing. I don’t know how to describe a virus without using the term *virus*.”

Another said, “You could think of it as a computer virus—they’re harmful things that get transmitted via the Internet.”

We noted that it has been hard for scientists to explain exactly what a virus is. We encouraged students to reflect on their own experiences with viruses to generate ideas: “What does the doctor tell you when she or he thinks you have a virus?” Students recalled that generally, they are told to “wait it out” vs. being prescribed antibiotics. This helped them to think about how viruses are different from bacteria (which are treated with antibiotics). We compiled the ideas, listing everything we knew about viruses on the whiteboard. Students realized that they knew more than they thought they did, but that they also still had a lot to learn.

We asked students to consider why scientists view viruses as “existing at the border between chemistry and life”⁵ as they watched a short video on viral transmission.⁶ We then revisited their initial ideas to look for any misconceptions. After discussing what students had learned about viruses from the videos in small groups and then as a whole class, we reviewed some key points. Viruses are not classified as living organisms in the biological sciences, yet share characteristics similar to those of some living things (e.g., bacteria):

1. Viruses do not grow.
2. Viruses do not produce waste.
3. Viruses do not respond to outside stimuli.
4. Viruses can reproduce, but not without the aid of the cells of the infected host.
5. Viruses mutate so that they are often undetectable by immune systems (and vaccines).
6. Viruses consist of genetic material (DNA or RNA) surrounded by a protein coat.
7. Humans can engineer viruses (e.g., for vaccines).

We reviewed the multiple ways that

a virus can be transmitted, depending on the type of virus, from one host to the next, e.g., through bodily fluids (blood, saliva, vaginal fluid, ejaculate), food, water, nonhuman animals.

We then discussed how the Ebola virus is transmitted—and how that compared to their prior conceptions of Ebola transmission.⁷ Students commented that they had been surprisingly uninformed on the topic. They then worked in their small groups to identify important facts that everyone should know about Ebola transmission⁸:

1. Ebola is passed through physical contact with bodily fluid of an infected host—living or deceased—through direct contact with the host’s bodily fluids or through contact with a contaminated object (e.g., needles, syringes).
2. Ebola is hypothesized to have originated within fruit bats.
3. Ebola hemorrhagic fever (the illness caused by the Ebola virus) spreads much more slowly than other infectious diseases, such as measles and smallpox. However, it is more likely than other infectious diseases to cause fatalities, particularly when it is not quickly contained.

Transitioning into our critical discussion of the Ebola virus and othering, we asked students, “How was Ebola publicized in the media? What do you remember about those news stories? How did you feel?” Students commented that the news coverage “was hyper-dramatized in the news,” “blown out of proportion,” and “people didn’t know how to handle it.” Yet our students also suggested the news coverage had helped increase public awareness. One student stated:

There have been a lot of huge catastrophes—you know, like how

fast the Black Plague spread. I think that being overly cautious is better than being like, “We’ll be alright.” We have a lot of people who can get sick really easily, and I think that the news might blow it out of proportion and cause a little bit of anxiety, but people do really need to know more about it. It’s the people that blow it out of proportion—it’s the way they take it—but I still think they have a right to be informed so that they can choose how to protect themselves.

Ebola vs. Measles

We showed our classes a tweet by Elnathan John, Nigerian novelist and satirist, reflecting on a concurrent U.S. measles outbreak: “Our thoughts are also with the measles-ravaged country America. I hope we are screening them before

coming to Africa.” We posted the tweet and asked students to take a few minutes and write a response in their notebooks to the following prompt: “How would you react to this? What does it make you think of? What would be your response if you were going to tweet back?” We asked students to share their ideas in small groups.

Then, in our whole-group discussions, we examined the implications of the viral comparison being made and how it highlighted differences of power between the United States and countries in West Africa. Some students were initially affronted by the tweet. One student commented: “He’s saying ‘measles-ravaged country’?!?! Everybody better have the damn measles for him to be saying that.” But other students recognized the satire and challenged their peers to think more deeply about the political statement behind the tweet. One student commented that her response was



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“Amen!” explaining: “In this country, we’re always like ‘Oh, cater to us, cater to us!’ But as soon as someone would do that to us [require us to be screened for measles], we would be freaking out!”

Students used their understanding of viral transmission to contrast the way the Ebola outbreak was positioned

How have news stories about Ebola contributed to racism, othering, and a view that Africans need to be “saved” or contained?

vs. the measles outbreak. Measles, which transmits through coughing and sneezing, spreads much more easily than Ebola and can infect up to 90 percent of nonimmunized people who come into contact with an infected person.⁹ Thus, as students pointed out, the tweet reflects both a difference in actual vs. perceived viral contagion and a difference in power between the United States and countries in West Africa.

We were prepared to ask students to examine the relative position of power that the U.S. government and other institutions seek to maintain, and how this domination is seldom questioned in the United States. However, the tweet was so provocative that these themes came up with little prompting from us in the group discussions. One student said the tweet “puts America in this position of pity, which is a position that we’re not used to being in. We don’t see ourselves in a disadvantaged place . . . so it feels weird to be ‘that poor country.’” Another student pointed to the irony of how U.S. residents are so concerned with “foreigners” bringing diseases, although the early colonizers brought many diseases, including measles and smallpox, that were devastating to the peoples of the Americas.

Students also compared how the Ebola epidemic was hyper-dramatized in the United States with their experiences traveling outside the country. Students noted how the media portrays Mexico as

a dangerous country. For example, one student commented, “I have a house in Mexico and I’ve been going my whole life. But people say, ‘No! Don’t go! The cartel!’”

We used these conversations as a bridge to connect students’ thoughts to the big idea of the lesson. For example, Sara summarized the students’ conversa-

tions: “These conversations are getting at this idea of “othering,” which is a big piece of what we’re talking about today. In what ways do we “other” people, particularly those from countries in Africa? Today we’re looking at how othering can happen through science-related issues.”

We shared a quote from the *Teaching Tolerance* article:

Deficit images of Africa contribute directly to racism. Historically, these misconceptions were used to justify enslavement and colonialism. The portrayal of Africa in Western media and children’s books continues to feed a belief in white superiority and the need of Africans (Black people) to be saved or feared.

“So there’s a reason why this othering has occurred throughout history,” we elaborated. “Western scientists have historically used science to justify the enslavement of Africans. One example was a pseudoscience called craniometry: Some scientists decided that the skulls or brains of people who came from African countries were different from those of people who came from European countries. This racially motivated ‘truth’ was debunked by Franz Boas, the German American anthropologist of the early 20th century. But for centuries it was seen as objective science.”

The Media’s Role

We then turned to the readings students completed before coming to class. The *Newsweek* cover story suggested that illegal “bushmeat” sales among West Africans in New York could be a “back door” for Ebola transmission in the United States. The *Washington Post* response critiqued the racialized language and misconceptions promoted by the *Newsweek* article. Using those stories as examples, we asked: “How have news stories about Ebola contributed to racism, othering, and to a view that Africans need to be ‘saved’ or even contained?”

Students noted that the photograph on the cover of the *Newsweek* article associated a chimpanzee with the Ebola outbreak and argued that that alone communicated a racialized message about the people of Liberia, Sierra Leone, and Guinea. Sara restated the comments of one of the earlier small-group discussions: “Often diseases that get a lot of attention in the media are those that come from Africa, and often they are either correctly or incorrectly associated with nonhuman primates. There’s a strong underlying connection to racial othering.” Students noted that the U.S. media negatively portrays cultural practices outside the United States. For example, they compared the use of the word *bushmeat* for wild game consumed in African countries with words like *venison* for wild game consumed in the United States, commenting how such a slight change in language produced very different images (e.g., primitive vs. civilized).

Although news coverage of U.S. aid workers in West Africa flourished, there were very few news items with stories of individual doctors or patients from the affected countries. The Ebola outbreak posed significant challenges, particularly to Liberia, Sierra Leone, and Guinea; the United States and other countries helped mitigate those challenges by providing additional resources and support. Yet,

the modest coverage of how individuals, governments, and Indigenous organizations in those countries were responding to the crisis contributed to a narrative of U.S. rescuers of helpless, benighted West Africans.

In our classes, some students challenged this U.S.-centric conception, although others did not. One student contended, “America just sees it as ‘Wow, our Americans are so great. They’re going to go over and save all these people.’” We asked students if they could recall any news story that discussed an individual patient or medical/aid worker who was native to Liberia, Sierra Leone, or Guinea. Their answer: none. We challenged students to consider how our mainstream media feeds into monolithic conceptions of Africa and Africans, which in this case portrayed “Africans” as “victims of Ebola” and not as agents combating the disease. We showed students an excerpt of Chimamanda Adichie’s TED talk on “The Danger of a Single Story” and discussed the single story we’ve heard about Ebola and “Africans.”

How Could Media Be Different?

We then focused our energy on changing the narrative with a Newstopia project: We asked students to work creatively with stories of West Africans confronting the crisis. We provided students, who would work in small groups, with four different news articles (one per group) that depicted West Africans using their knowledge, skills, and other assets to combat the disease: One article illustrates a young nursing student’s successful efforts to nurse infected family members¹⁰; another describes how community members, spiritual leaders, medical workers, and anthropologists came together to find ways to protect community members from Ebola while sustaining their ceremonial burial practices¹¹; a third describes the impact of the Ebola epidemic on the role of traditional healers in West Africa¹²; and a final article illustrates how the

government of Sierra Leone recruited community members to help combat the spread of the Ebola virus in remote communities.¹³

We asked each small group to create a short (3- to 5-minute) news presentation that would teach the class in an engaging and creative way. We requested that each presentation:

1. Use the news story provided.
2. Research additional information to add background and context.
3. Integrate at least three scientific facts about Ebola disease transmission.
4. Showcase a positive (i.e., asset vs. deficit) view of the West African countries or people in one of the three countries affected by the 2014 outbreak by, for example, demonstrating how they acted as agents of change.
5. Challenge stereotypes.

Students spent about 30 minutes working with their groups. They read and discussed the articles and then created their own newscasts or photojournals, which they presented to the class.

In one presentation, students featured the story of Fatu Kekula, a young nursing student from Liberia who nursed three of her family members infected with the Ebola virus back to health. Kekula created protective gear from garbage bags, rubber boots, stockings, and a raincoat. This self-made biohazard suit prevented her from contracting the Ebola virus while she cared for her infected family members. Students presented their assignment as an interview between a news reporter, Kekula, and her surviving family members. Playing the role of her mother, a student said: “My daughter is our hero. Without her inventive thinking, I would have died.” The student playing the role of Fatu Kekula responded, “I just did what I had to do

to help my family.” One student said this story challenged stereotypes by showing that in West Africa, “like in America, there are people studying to be nurses. And they are doing what they’ve got to do to save their family, just like us.” Another student noted that the story wasn’t about “just another faceless victim.”

Another group highlighted how a community’s cultural views about burial—a pregnant woman should not be buried with her fetus—contrasted with the position of Ebola workers, who wanted the woman’s body to be buried with her fetus to prevent the spread of infection. Our students presented this as a series of interviews in which different perspectives became a forum to foster compromise. One student represented a local villager and stated, “As long as our fundamental beliefs are being respected, we can probably come up with something.” Following the newscast, our students reflected that various members of the community who “might seem stuck in their ways” nonetheless altered their positions to achieve a common goal. The community’s burial practices in Sierra Leone, though different from those of members of our class, became relatable through the newscast. “It didn’t really seem fantastical to me, because I have my own rituals,” one student explained.

Following the presentations, we asked students to reflect on the following question: How does racialized and colonialist othering in the media influence our understandings of science issues?

Students revisited the idea that Africa is often presented here as a “dirty” and “diseased” place, and that it is the “white man’s burden” to bring “civilized medicine” and “advanced technologies” to African countries. We also addressed how this ideology has been used to legitimate the exploitation of African countries with little benefit (more often, in fact, with disastrous consequences) to residents of those countries.

Our students also discussed their responsibility, as teachers, to educate their

students about these issues. “As a teacher,” one said, “you really have to research to make sure you’re presenting students with all the information, not just a perspective. They acknowledged the lack of attention to these issues in their field placement classrooms and their own schooling experiences. They noted that “a lot of people avoid teaching controversial issues,” but said that designing and engaging in student-led research and presentations, as they had done during the Newstopia project, helped them feel more comfortable as novice teachers implementing justice-oriented (“controversial”) lessons in science: “Going through the process, practicing, and finding resources from different perspectives makes it easier to do it yourself

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when you’re in the classroom.” Ultimately, our preservice teachers vocalized an increased understanding of the relationship between colonial mentality and the public understanding of world health issues, and expressed commitments to becoming more conscious about how they analyze news stories in the future.

In this short class, however, we did not take enough time to address some important topics that, upon reflection, we don’t want to go unnoticed or unchallenged. The severity of the 2014 Ebola epidemic in Sierra Leone, Guinea, and Liberia can be largely attributed to the lack of infrastructure and access to medical technologies, supplies, and residents who are trained as health workers in these countries. As we anticipate teaching this again, we want to be sure that, in addition to addressing the issue of othering, we explicitly address the structural inequities resulting from a long history of imperialism, colonization, and the vast exploitation of resources in these

countries. We also recognize our own unintentional form of colonizing in our use of primarily U.S.-based resources for this lesson and plan to make resources by West African scientists and writers a more central feature of this lesson, including a recent book by Chernoh Alpha M. Bah that challenges the official narrative of the Ebola origin and disease transmission.¹⁴

We would also like to spend more time with students discussing the relationship between racism and the way that Ebola was publicized in the media. Students did make some connections in this regard. For example, one of our students recounted a story from her childhood in which a young classmate who had recently emigrated from Africa (our student did

not recall the specific country) was teased about “having malaria.” Reflecting on the Ebola outbreak, our student questioned the racist nature of this viral name-calling. Although the role of racism was inevitably part of the conversation, students needed more time to deconstruct the relationships between racial oppression and how the media negatively portray residents of African countries.

We also want to highlight how racial othering affects recent immigrants, particularly nonwhite immigrants, and include more current examples of the impact of racial othering on science issues within the United States (for example, the medical practice of undertreating African American patients for pain). Engaging with our preservice teachers in these hard conversations helps us all learn how to teach, learn, and live more justly in a global society. ■

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