

Supplemental Material

CBE—Life Sciences Education

King *et al.*

Supplemental Materials for

Evading race: STEM faculty struggle to acknowledge racialized classroom events

Gretchen P. King, Tatiane Russo-Tait, Tessa C. Andrews

Appendix A – Cases	2
Appendix B – Survey	4
Appendix C – Code Descriptions	5

Appendix A – Cases

Below are the two cases STEM instructors read. Racialized events are in orange text.

Case 1: Dr. Y's Introductory Biology

Dr. Y teaches a large-enrollment introductory Biology course. He established groups early in the semester so that students could get to know each other. He allowed students to form their own groups. Students have been in these groups for 8 weeks of the semester now and spend a lot of class time working together. Here is what happened during week 8 of Dr. Y's course:

In their groups, students worked on a case study that examined Henrietta Lacks and the ethical implications of consent and medical research. Cells taken from Henrietta as a patient were cultured and have been used in tens of thousands of research studies without her consent or compensation for her or her family. Before students started the case study, Dr. Y emphasized that this case study was important because it represented diversity within science. Sam, a Black student, worked with her three White groupmates. Because of the structure of the classroom (a lecture hall), she sat a little apart from the other three, down a row, and had to twist in her seat to talk to them. When the groups were formed in the beginning of the semester, she felt awkward because there didn't appear to be a group that wanted her to join and she joined this group because they were sitting closest to her. That awkward feeling when interacting with her group had never gone away. The three other members of her group rarely heard her when she spoke and did not actively seek her input on the problems [The Isolated Event]. Today, however, her group mates leaned forward in their seats and expected her to answer all the questions. "What about number 3, Sam?" Kris asked eagerly [The Spokesperson Event].

Dr. Y made his way around the classroom and paused when he reached Sam's group, as she responded, "Um, I'm not really sure about what that one is asking." Dr. Y looked over Sam's shoulder, "Oh, that's a tough question. It must be difficult to be an athlete and a Biology major! No time to study. Let's break it down into smaller parts..." [The Stereotype Event]. He explained the question in a different way and got the group started. Sam thought to herself, 'I can't believe he just said that!' One of her groupmates, Jordan leaned forward excitedly and whispered, "I didn't know you were an athlete! What sport?" Frustrated, Sam whispered back, "I'm not."

Dr. Y returned to the front of the class. From his observations of the group work, he realized that the students weren't getting as far as he'd like. He announced to the class, "You aren't going to finish this today, but we won't have time for it next class period. Be sure to finish it with your group before next class period. You'll still be responsible for the content on the next exam. Are there any questions before we leave?"

One of the students in the front row asked for practice problems to use in studying for the upcoming exam. Dr. Y replied, "Everything you need is in the textbook and in my powerpoints. There's no reason to look for additional resources."

After class, Sam went up to Dr. Y and asked to set up a time to talk about her grade on the latest group assignment. She noticed that her group members received scores of 96, but her grade was a 90. The assignment was completed in class together, as was course policy, and they had all turned in the same answers. "I don't do the grading, but if you received a grade less than your groupmates, then you must have done something wrong. Look at how you used the terminology, it could be that you didn't use the scientific terms correctly. If you still have an issue, request a regrade from the TAs," replied Dr. Y [The Unfairly Graded Event].

Case 2: Dr. Z's Introductory Chemistry

Dr. Z teaches a large-enrollment Introductory Chemistry course at UGA. To increase student engagement, she has worked to incorporate more active learning into her course. Here's a glimpse of a typical class period in Dr. Z's class:

Dr. Z opened class by reminding students of the last class period and asked an open-ended question that applied the topic from the last class in a new situation to gauge where students had progressed on the current topic. After a long silence, Emily's tentative hand raised. Emily, a White student, had never answered a question in class before. "Yes?" Dr. Z said, pointing at her. After Emily answered, Dr. Z said, "Not quite. Who else can offer an answer?"

After another long pause, Taylor, a White student, raised their hand. Taylor is a regular contributor to class discussions and well-known among their peers and instructor for knowing a lot about Chemistry. Dr. Z said, "Yes, Taylor, what's the answer?" Taylor answered the question correctly. "Great job! You got us to the correct answer. Everyone, make sure to write down what Taylor said." Dr. Z expanded on Taylor's answer and then moved on to new information. After lecturing for twenty minutes, Dr. Z started the students working on a set of practice problems in small groups.

As Dr. Z walked around the classroom, she noticed that one group of students seemed to be struggling. She approached the group to listen. The students were clearly off track. Spencer, a Black student, didn't agree with the steps his group used to solve the problem. He pointed to a part of their drawing that wasn't making sense and said, "Why did we do that here? That doesn't make sense." Alex, an Asian student, repeated, "That doesn't make sense." Dr. Z leans over Alex's shoulder, "Nice catch, Alex! What you did there doesn't make sense" [The Ignored Event]. Dr. Z talked to the group for a few minutes, helping them to make sense of the problem.

Spencer was distracted by feeling that his contributions to the group were ignored and that Alex had been recognized for something that he had been saying. He thought to himself, 'Why should I even bother speaking up?'. Gesturing toward the problem, he said, "I see what the professor said, but I don't see how that relates to this." Alex considered for a second. "I think you're just having trouble understanding the content. Maybe you should go to the tutoring center" [The Dismissed Event].

Meanwhile, Dr. Z pulled the class back together to debrief about the practice problems. She calls for volunteers to answer the first problem. She noticed Taylor's hand up again and added, "Let's hear from someone who hasn't volunteered yet today."

After class, a line formed at Dr. Z's podium of students who had questions. Jordan asked a question that Dr. Z feels that she can easily answer, but also is a step further than most students got in the class that day. "Great question!" she says. Dr. Z excitedly starts working out the problem on the board to explain the answer.

Spencer stood patiently with the other waiting students for his turn. He has another class soon, but he wanted to clarify his thinking while it was still fresh in his mind. He asked a question related to what Jordan asked. As he started talking, Dr. Z glanced at her watch. She turned her back on Spencer while listening to pack up her computer. After he finished speaking, Dr. Z said, "I'm sorry, I'm not sure that I understand your question. It might help you to read Chapter 7. After you've done that, come to office hours and we can chat" [The Disrespected Event].

Logan, a White student, is waiting for Spencer outside the classroom, so they can walk together to their next class. Logan and Spencer have several of the same classes and have started to become friends while studying together. Spencer is aggravated that his question wasn't answered. "I just can't catch a break. Dr. Z must be racist," Spencer joked to Logan. Logan laughed, "Nah, man. Chemistry is hard for everyone" [The Gaslit Event].

Appendix B – Survey

This case study of a college classroom includes events based on the experiences of real students and faculty. Please read the case and pay attention to whether all students in the course feel welcome, feel included, and have the same opportunities for success.

CASE (1 or 2) INSERTED HERE, without highlighting or events noted

As you answer these questions, please consider whether all students in the course feel welcome, feel included, and have the same opportunities for success.

Name up to 5 things you noticed in this classroom that were going well. Explain **WHY** each of these are valuable.

Name up to 5 problematic things you noticed in this classroom. Explain **WHY** each of these are a problem.

Of the problems that you noticed, what needs to be addressed first? Why does it need to be addressed first? What would you suggest the instructor do differently?

Appendix C – Code Descriptions

Code	Description	Example from data
Naming Race	The response used words or phrases that explicitly indicated they were discussing race. These included words and phrases such as students of color, White, Black, ethnicity, etc. When responses Named Race, they were actively pointing out that the events were racialized. In addition to explicitly naming race, these responses did not dismiss, question, or minimize the role of race in the event.	“Dr Y was making assumptions about Sam with little knowledge of her. Sam may have felt she was being pigeon holed based on her race rather than her personal interests and background.”
Sidestepping Race	These responses used words or phrases that can be associated with race but also may be applicable to other identity characteristics, such as appearance, background, stereotypes, etc. Because the cases that participants read only included identity characteristics related to race, we can assume that participants were using these words as racial proxies.	“Stereotyping students --assuming student was an athlete, assuming athlete are not strong academically.”
Erasing Race	The response did not directly or indirectly acknowledge that race played a role in an event. There is a notable absence of discussing race in these responses. These responses may make more general evaluations, or they may discuss the specific student harmed but not acknowledge the role of race.	“Dr. Y should have offered to look at the student’s grade as well as having the TA. Perhaps there was some discrepancy that caused the student to get a lower grade that the TA missed.”
All Students Matter	A form of erasing race, these responses argue that every student needs to be treated the same way. That is, they go out of their way to talk about how these types of experiences are negative for any student, or how to teach a certain way for the benefit of any student, therefore implying it is not really about race.	“Interactions with the students. Making sure that students are valued, and that no student is placed above another.”
Excusing the Instructor	A form of erasing race, these responses argue that the racialized event was understandable or excusable. They may provide alternative explanations or argue that there’s not enough information in the case to draw conclusions about the instructor’s intention.	“The teacher assumes details about students or he/she just confused students. Not hard to do, but took it as fact.”
Impact without Cause	A form of erasing race, these responses attribute the racialized event as being a problem perceived by the individual rather than being an actual problem. It recognizes the result of the racialized event (harm to the student), but did not recognize the cause or the people involved in the event.	“Sam was stuck in a group that she didn’t feel comfortable with.”
Rejected the Task	These responses questioned the relevance of race in the event. These answers directly name race and then reject the importance of race.	“I did not notice any significant problems. The author tries to point out color and race to steer the reader, but the situation sounds like a typical day.”