Speaker 1: I was interested in finding more engaging ways of teaching my students, because I do teach English, and so when I heard about it, it's new to me and I wanted to learn more about it and incorporate it in my classroom.

Christina Barsi: Hi, I'm Christina Barsi.

Sun Ezzell: And I'm Sun Ezzell, and you're listening to the Magic Mountie podcast.

Christina Barsi: Our mission is to find ways to keep your ear to the ground, so to speak, by bringing to you the activities and events you may not have time to attend, the resources on campus you might want to know more about, the interesting things your colleagues are creating, and the many ways we can continue to better help and guide our students.

Sun Ezzell: We bring to you the voices of Mt. SAC, from the classroom to completion.

Speaker 4: I know I'm going to achieve my goals, and I know people here are going to help me to do it.

Speaker 5: She is a sociology major, and she's transferring to Cal Poly Pomona. Psychology major. English major.

Sun Ezzell: From transforming part-time into full-time.

Speaker 6: I really like the time that we spend with Julie about how to write a CV and a cover letter.

Christina Barsi: Or just finding time to soak in the campus.

Speaker 7: ... think of the natural environment around us as a library.

Christina Barsi: We want to keep you informed and connected to all things Mt. SAC, but most importantly, we want to keep you connected with each other. I'm Christina Barsi, Mt. SAC alumni and producer of this podcast.

Sun Ezzell: And I'm Sun Ezzell, learning assistance faculty and Professional Learning Academy coordinator.

Christina Barsi: And this is the Magic Mountie podcast.

Christina Barsi: Hi, it's Christina. And in this episode we spend just a little more focused time on unpacking the Question Formulation Technique. As you'll hear Luz say in the episode, QFT offers a little more joy in a demanding profession. And she quotes journalist Clive Thompson when he says, "How should you respond when you get powerful new tools for finding answers? Think of harder questions." Enjoy.

Luz: Let's take a minute to unpack the Question Formulation Technique. So we began by sharing with you some rules for producing questions. Then we had a topic or question focus to ask questions about. I asked you to produce questions following the rules, and before that, we thought for a couple of minutes about the difficulties in following the rules. We work with two types of questions, closed and open. We prioritize the questions. We establish an action plan, and at the end, we reflected on what we learn and how we learn it.

Luz: So there are three thinking abilities in the Question Formulation Technique process. First, there is divergent thinking, thinking from many different angles, from different perspectives. The divergent thinking occurs when you work producing the questions following the rules. And going back for a second to the rules, the rules frame the work of producing questions. Very often, people have difficulties on getting orders to ask questions, because there are no instructions on how to produce the questions.

Luz: So when you ask people, ask as many questions as you can. Do not stop to jot or try to answer the questions. Write the questions as they come to mind. If you get distracted, change that into a question. So those are very specific instructions on how to produce questions. Just be aware also that for the divergent thinking, when I gave you the instructions, I didn't say, "Come up with 10 questions about this topic or question focus." I let it go open and that's why some of you had 15 questions, some of you had 28 questions, some of you had 10 questions. So you don't limit the number of the questions that will be produced by the groups or by the individual.

Luz: Then there is convergent thinking. Convergent thinking occurs when you prioritize the questions, and also when you establish a plan of action with the questions. And then, there is metacognition everywhere. Metacognition occurs when I ask you to reflect on the rules for producing questions, on the advantages and disadvantages for asking close and open ended questions, on the rationale for choosing the priority questions, and then in the reflection itself, when I ask you what did you learn and how did you learn it. And those reflection instructions can change. Be aware that the reflection is one piece or part that people have a tendency to cut, because there is no ... You run out of time. Sometimes because there is fear that the students will say, or participants will say, when you ask, "What did you learn?" They would say, "I didn't learn anything." So we have to deal with that, because if you don't ask that, you will not be aware of how much they are learning, or which places they are missing learning.

Luz: And we have heard that from educators several times when they don't know what is the impact of the Question Formulation Technique. Very often we ask, "Did you do the reflection?" And they say, "No, I didn't do it. I just did one component or two components of the process." If you cannot do the reflection the same day that you have facilitated the Question Formulation Technique, do it another day. Give homework, but make sure that you do it.

Luz: All right. So these are the outcomes. When you use the Question Formulation Technique, there is greater ownership, more intellectual or greater intellectual rigor, and greater curiosity. So all that you can accomplish with one process. You can also, as you saw here, you can foster a collaboration. You foster a classroom that is more equitable and inclusive, and the rules for producing questions help quite a bit with that. So that being said, we are going to move to some examples.

Andrew : All right. So I'm just going to be sharing a few examples. Luz is going to share a few other ways to apply the Question Formulation Technique into your work. I'm going to be sharing mostly examples from higher education, but before we can get to college, we need to start with kindergarten, of course. So this an example of how the QFT was used in a kindergarten classroom. Jennifer Shaffer was teaching a little bit about alligators, and so she was going to read to her students a book on alligators, and she wanted to engage them in thinking on what questions they might have before reading the book as a way to stimulate that sort of engagement. So this was the question focus. She provided her students an image from a National Geographic, and here's some of the questions those kindergartners had: "Is the alligator camouflaged? Why do babies have stripes? Are those baby crocodiles?"

Andrew : When Dan was presenting this same example at Harvard Medical School, as a Harvard medical school faculty is wont to do, he interrupted in the middle of the lecture, but he had actually some really important insight. He said, "Dan, do you see what's happening between questions two and three?" He said, "This is the exact type of thing when we're trying to get our premed students to do. In question two, a student says, 'Why do the babies have stripes?' And the other student says, 'Are those baby crocodiles?' So they were actually challenging an assumption that the other student had made, which is that they were babies."

Andrew : "Is it a Mom or Dad crocodile? What is the green stuff? Why are they in the water so low? Where are they going? Why are the baby alligator's eyes white and the Mom's black?" And this is something I didn't see when I first saw that image, but this astute kindergartner picked up on that. "Why are the baby alligators on top of the Mama alligator?" And again, "Why does Mama or Daddy have bumps on them?" And so then students worked on ... So Jennifer read the book to the students and then they actually answered some of the questions that they had produced here in this pre-reading activity.

Andrew : A familiar face, Sun Ezzell, professor of English at Mt. SAC, she was teaching about grades. This was earlier on in the semester. She wanted students to think about whether they should be taking the class as pass/fail or for a letter grade. She wanted them to reflect on their learning objectives and she was also having them read an article by Alfie Kohn on this subject matter. And so for students who read the article, they had this question focus prompt, The Case Against Grades, which was the title of the article. And for those who didn't read the article, they could still engage in this QFT process. Their Q focus was just grades.

Andrew : And here's some of the questions some of those students asked: "Why are students intimidated against grades? Is the grading process needed? Does a grading system need improvement? Why is it challenging to get good grades? Why do students think school is challenging? Why do students focus more on grading than learning? Do students focus more on grading than learning?" And so after the activities, some students indeed decided that, based on their learning objectives for the class, maybe they should switch to pass/no pass rather than stick to a letter grade. And it led to a bit of an organic conversation on feedback in the learning process and the role and how that might be integrated into the learning inside the class. And Sun had greater insight into what her students were thinking, why they were taking the class, and what they were hoping to get out of the process as well, so a bit of a formative assessment.

Andrew : Here are some of her students' reflections: "It was easier to understand the article," so a bit of comprehension there. "An amazing group activity. I love that no one was excluded." Elements of equity there and inclusion. "I can come up with questions very quickly, which is good because it means thinking and creativity is improving and growing so that students use their own skills as developing through this process." And, "When we come up with our own questions, we think more deeply." So those are some of those students' reflections.

Andrew : This is an example of how the QFT was used in a biology classroom at Brandeis University. Rachel Woodruff was recognizing that the quality of her students' research papers at the end of the semester weren't up to snuff. She was really displeased with the quality of their writing and the quality of their research questions. And so what she recognized was that she needed to actually develop this skill throughout the entire semester rather than throw them to the wolves and week eight or nine.

Andrew : And so she used the QFT earlier on in the semester to build this critical skill. Students were assigned a research article that they brought home as a part of homework, and their homework assignment was to ask questions on that research article. So on their own, they read the article, and then they came into class having produced their own list of questions following those QFT rules. Again, they were asked to ask as many questions as you can about the reading. So students brought their questions into class the next day. They discussed, as groups, what constitutes a good biological research question, and thought about what other types of questions might be helpful, what other types of questions might fall out of the purview of this research process. And then, as groups, actually worked on improving the research questions they had developed to better align with what they believe constituted a good research question. What Rachel shared back with us is those are some of the best research papers she had had to date, because students were actually developing the skill deliberately, rather than, again, being thrown to the wolves and figuring out what the research topic is, what they want to ask questions about, and then actually engage in the process in a short amount of time.

Andrew : Tina Romanelli, she's faculty at Meredith College, which is in North Carolina. It's an all women's school. Tina had been at a couple of different institutions before Meredith and she was really struck by the lack of student pushback she received at Meredith College. Other institutions, students would question the role of different types of homework assignments, questions on tests, and she actually valued that. She viewed that as a bit of the democratic processes that exist in the classroom that she really wanted to tap into. And when she came to Meredith, again, an all women's school, she recognized that maybe there was a power dynamic with these students, that they weren't more apt to participate in those democratic processes. So she used the QFT to encourage students to better engage in their own learning in all different ways, not just the content, but the process itself, which is really amazing. She's doing some great work with the QFT.

Andrew : Emily Westover, another faculty at Brandeis University, a biologist, used the QFT as a formative assessment to better understand what her students knew or did not know. She had facilitated an exam, and the majority of students performed really poorly on this one certain question, which is also a foundational part of where they were going next. And so not only did she need to correct sort of in the moment, sort of the misconceptions on this question, she also wanted to better understand how she might adapt or change her teaching in that course going forward.

Andrew : And so for the QFT, this was the question focus. She asked students to ask as many questions as you can about ... and then she plucked out that exam question. And what she found was, in the moment, students were thinking more deeply, some of those misconceptions were corrected, and she also better understood ... Emily better knew how she might teach this going forward. So her instruction was actually informed directly from where students' questions were. She understood where those misconceptions were.

Andrew : Kelly La Venture at Bemidji State teaches a course on business marketing. As a part of this course she gives students the opportunity to identify something that's not covered in the syllabus that they want to learn about, and then she identifies a guest speaker that's actually going to come in and address some of those areas those students identify wanting to learn more about. It's always tough to engage students with the guest speaker and it's sort of ... I talked with someone at Union College who ... They went on a field trip sort of out, and no one had any questions. They weren't engaging the person that had invited them out there, and they were actually disinvited from going there in the future, because they didn't see sort of the interaction they were hoping for.

Andrew : Kelly used the QFT to engage students in thinking on this area that they had identified, which was marketing analytics. That was the topic those students recognized they wanted to learn more about, so they used the QFT to ask questions about that. Their priority questions were: "How often should a company use marketing analytics to their benefit? How can I use social media and marketing analytics together?" And, "With marketing analytics, how can I analyze my competition?" And so Kelly recognized how engaged they were. She wrote ... reflected, "Not only were students highly engaged in the process the whole 90-minute class period, but student after student, not just the same students, asked question after question of the guest speaker and didn't move from their seats when class was over. They stayed about 15 minutes more to keep asking questions." And then she says, "I had a holy cow moment. We did the QFT last Tuesday. Then on Thursday, we had a guest speaker, and this week the students approached me unsolicited to share how much they liked the QFT and asked me to do it again." So not only did it sort of engage students during the activity, not only did it prepare them to engage more effectively for the guest speaker, but they named it as a process that they would to continue to do to guide their learning.

Luz: All right. So question formulation is a skill for the 21st century, and as you know, in the age of Google, where information is available at your fingertips. Clive Thompson, who is a journalist and technology blogger, he wrote this book, Smarter Than You Think: How Technology Is Changing Our Minds for the Better. He finishes his entire book with this quote, or question, "How should you respond when you get powerful new tools for finding answers? Think of harder questions." So question asking is the skill, is the tool to have. The skill of question formulation for reframing the perception of ignorance, not a weakness, but an opportunity, for arriving at better answers and more questions, for increasing engagement and ownership, and for a little more joy in a very demanding profession.

Christina Barsi: Thank you for listening to the Magic Mountie podcast. Remember to subscribe on Apple Podcasts, Spotify, or wherever you like to get your podcasts, so you can listen in the car, in your office, or however you like to listen. Once you subscribe, we'd love to hear what you think by leaving us a review. And don't forget to share your favorite episodes.