Speaker 1: Question Formulation Technique has been an interesting technique for me, because I went to the first conference, they put on. And I've started to use it but like many people sometimes you need to see it twice, and so I really wanted to improve my understanding of how it works and how it might be used in other aspects of my teaching and so I jumped at the chance, of course, to try this because even the little bit that I knew has been so beneficial.

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 is transferring to CalPoly Pomona. Psychology major, English major.

Christina Barsi: From transforming part-time into full time.

Speaker 7: We like the time that we spend with Julie about how to write a CV and a cover letter.

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

Speaker 8: To 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, this is Christina and today we have an episode that was captured during fall semester inspired teaching day. The desk team brought in some amazing facilitators to take us through the process of the Question Formulation Technique. Luz Santana, the co-director of Right Question Institute and Andrew Milligan, director of strategy for the education program of the Question Formulation Technique all the way from Boston. They introduce us to the process and emphasize why there is such an importance to asking questions, especially good ones. You can even follow along with the exercises at home. Enjoy.

Barbara G.: Hi and so good to see all of your faces. I'm Barbara Gonzales. I teach read and learning assistance and I'm one of the members of the DE study team. We're happy you're all here. It's a conference that we take great pride in. There's nothing better than to be in a room full of educators that want to produce better learning for their students. I'm going to introduce you to Sun Ezzell and she's responsible for helping us all meet the people that will be presenting today. Thank you.

Sun Ezzell: Thank you Barbara. Good morning. I'm so happy to be here with all of you. I'm so happy and pleased to get to welcome Andrew and Lois from Right Question.

Luz Santana: Good morning too. Well, it is really exciting to be back here at Mt. SAC and I have been telling people, well I sort of quite from the work in the area of education because right now I have work in other areas but when few months ago, Suna called the office about this opportunity to be back at this conference, I said count on me, I am back at Mt. SAC. And it has been great so far to hear that some of you have been using the Question Formulation Technique.

Luz Santana: So in the presentation that we have today there will be something for all of you who are new to the process and there will be also some new lessons and learnings for those of you who have been using the Question Formulation Technique. So take advantage of us either if you are new or if you are already a Question Formulation Technique user.

Luz Santana: So the work that we will be sharing with you today began many years ago. Back in 1990 my co director and I, and others as well were working in a low income community in Massachusetts, Lawrence where I still live. And in Lawrence we were working with parents, most of them immigrants. And as we work with the parents they said not once but about a thousand times that they were not going to the schools because they didn't even know what questions to ask.

Luz Santana: When we heard that they didn't know what questions to ask, guess what we did? We came up with a list of the questions we thought that they should be asking to learn that it was not about giving them the questions. When we gave the questions rather than helping, we build dependency and if today the issue was discipline and next week was an issue with an individual education plan. They used to come back and say, what should I ask?

Luz Santana: And there we learned that we had to build the skill so they could ask questions in many settings and situation. And the parents show us that we were right about that assessment because they began to ask questions when they were looking for jobs, when they were going to the doctor, when they were dealing with family issues, when they were problem solving in the community. So over the years what we have done is to distill what is essential in a very easy, simple and powerful way, build the skill of question formulation. And that is what you will be experiencing here today. How do that work. And we have developed resources to accomplish that and here we do support you.

Andrew Milligan: Good morning everyone. So I'm just going to be sharing a few words on question formulation, some rationale for why it's important now more than ever. Lois and I have been working a lot with folks in higher education since 2017. And we're so excited to be back. Really Mt. SAC should be the first one on here and all these other institutions should come up after that because you guys were really ahead of the curve. Sun, Barbara, Diane, Mark, all of these folks are great resources in the room and they'll be a sitting on a panel later today, Herschel as well. So we're just so elated to be back. Richard Feinman, a Nobel Laureate physicists said quite simply, "There is no learning without having to pose a question." Amy Gladfelter, biologists at UNC Chapel Hill shares that, "The study of biology is about asking good questions about life and figuring out clever ways to find the answers."

Andrew Milligan: David Hackett Fischer, professor emeritus at Brandeis University and historian offers, "There can be no thinking without questioning. No purposeful study of the past, nor any serious planning for the future." An historian, a biologists, a physicist, a mathematician walking into a bar and they all talk about how great questions are. George Canter also talks about in mathematics, the art of posing a question must be held of higher value than solving it.

Andrew Milligan: This is a wonderfully pithy book written by Stuart Firestein, former chairman of the Department of Biology at Columbia University. He wrote this book on ignorance, how it drives science. He also has a book on failure. He teaches courses on ignorance and failure at Columbia, which puts his students in quite the conundrum. Would they like to excel at failure or not? So he wrote this book on the value of ignorance and he really works on reframing the perception of ignorance, not as a weakness, but as a strength.

Andrew Milligan: Premed students were coming into his courses believing all they need to know is what was in the textbook, and what Stuart shares with them is no. That's all we know now. What we don't know is much greater. So Stewart ends his book. With this, "We must teach students how to think in questions. In other words, how to manage ignorance."

Andrew Milligan: College presidents agree in a New York times interview on what college students should be learning in the 21st century. Leon Botstein at Bard college, he's been there for an eternity, believes that the primary skills should be analytical skills of interpretation and inquiry. In other words, how to frame a question. Nancy Cantor now at Rutgers offers, "The best we can do for students is have them ask the right questions." Peter, Salvia, Yale University, just this a year in his welcoming address to freshman students shared with students, "We are here to ask questions, questions about one another and about the world around us. We are at Yale to nurture a culture of curiosity."

Andrew Milligan: And this isn't anything new. College leaders and intellectuals have found that questions are valuable for centuries now. In this book, Robot Proof by president Northeastern [inaudible 00:08:53], he cites a public intellectual from the 19th century who said, "Someone with a college education is able to converse, is able to listen, can ask a question pertinently."

Andrew Milligan: So all these intellectuals, leaders in their fields across all different subject areas, college presidents, past, present, all believe question formulation is important. So we must be teaching it to our students, right? Of course what research has found is that college students do not develop this skill during their time in undergraduate. A research study out of the University of Washington found that only about 27% of college graduates actually develop this skill during their undergraduate career and the problem begins long, long before that.

Andrew Milligan: Who has a young child in their life, niece, nephew, child of your own? You're going to think these are conservative estimates, but this is what the research has found. James Sully in a seminal psychological study, he dubbed age four the true age of inquisitiveness, when question after question is fired off with wondrous rapidity and pertinacity. You can tell it's an old study based on some of the vocab choice. Paul Harris, my former advisor, conducted a study and he found that young children ask 10,000 questions per year before they begin formal schooling. Again, you might be saying half of those are why, why, why, and are we there yet? But they're asking questions. They're agents of curiosity. But by the time they're adolescents who's asking questions in the classroom? A research study found that teachers are asking about two questions per minute, students about two questions per hour. And not only are there disparities between teacher and student questions, there's also differences between which students are asking questions.

Andrew Milligan: So research has found that higher achieving students are asking more questions than their moderate and lower achieving counterparts. And students from higher income families ask more questions than their moderate and lower income counterparts. So not only disparities between teacher and student questions, but also which students are asking questions. It's not for lack of trying. We've heard from teachers that it feels like pulling teeth to get their students ask questions, and students are only asking about one fifth the amount of questions that teachers would like them to be asking. So they recognize the value of question formulation. They want to teach our students how to ask questions, but they're still not asking questions.

Andrew Milligan: And this was an interesting research study out of Indiana University that found that first year students persist in the question formulation behaviors they exhibited as seniors in high school. So seniors in high school who are asking questions continue to do so as first year college students, and students who are not posing questions do not do so as first year. So their question asking behavior without any intervention persists.

Andrew Milligan: So how can we go from this really palpable feeling of pulling teeth to feeling of excitement that comes with fostering a culture of curiosity? Well, we have to move from this being the exception. This is a seminal study in education on questions in the classroom. And of course it was on teachers as questions. Romiette Stevens, a faculty member at Columbia University observed 100 classrooms and there was one anomaly. It was the one classroom where students were posing questions. And what Romiette observed was the result was that the lesson developed an impetus born of real interest. So over a hundred years ago, this educator made this observation that when students ask questions, they feel more engaged, they're more interested in the learning. So we have to move from that being the exception to it being the norm.

Andrew Milligan: Since Lois and Dan published Make Just One Change, they drew upon five classroom teachers who were using the QFT in their classroom. So we've moved from just five examples to over 350,000 educators around the world and over 140 countries using this strategy to teach students how to become more deliberate in their question formulation. So what happens when students learn how to ask questions? John Hattie and his famous meta analysis found that student question formulation is one of the most effective metacognitive strategies and engaging in pre-lesson self question can actually increase the rate of learning by nearly 50%.

Andrew Milligan: A ninth grader from Boston, Massachusetts, he was in a summer remedial program, he went through the QFT and he reported that, "The way it made me feel was smart because I was asking good questions and giving good answers." Now smart might not be a word the student typically used to describe himself, but after he realized that he had questions to which he wanted to find the answers and there's agency in that, this is how he described himself, you can see those affective changes. A student at Brandeis University believes that the QFT really teaches a way of thinking so students can be thinking critically every time they read trying to connect concepts and deciding whether to take facts and information at face value or dig a little deeper. Right information literacy. And a student right here at Mt. SAC reports, "I learned that by doing the question exploration, it can help you not be stuck when you do not understand the material." So it's a strategy. This student now identified, he had in his tool belt a skill he was developing to navigate things when he wasn't sure.

Luz Santana: This is the Question Formulation Technique and this is what it accomplishes. Allow students to formulate their own questions, work and improve their questions, prioritize questions, strategize on how to use questions, reflect on their questions and the process, and use their questions to drive learning. So a very simple process that accomplishes all that.

Luz Santana: All right, so let's now look at the rules that we will be following. The rules for producing questions. Ask as many questions as you can, do not stop to answer Josh or this course, write down every question exactly as stated, and change any statements into questions.

Luz Santana: And here is what we are asking questions about. Some students are not asking questions. For the next three minutes or so, ask as many questions as you can. Do not stop to answer Josh or discuss. Write down the questions exactly as stated, and change any statement into questions, number the questions as well. Let's go.

Christina Barsi: So what came next was a lot of activity and discussion. The groups went through the first steps in beginning the QFT process. The step that came after the one that you just heard required participants to then decide which of their questions were open ended or close ended. Closed being a yes or no answer or something straightforward and an open question yielding many ways to answer it. Here's what we learned next.

Luz Santana: Both types of questions are good and useful depending on the kind of information that you want to get. Sometimes you want to ask a close ended. And with that response that will serve as springboard to ask another question. So contrary to some beliefs that the opening ended are better than the close ended, both kinds have its own purpose. So what I would like you to do is you're going to take one of your close ended questions and you are going to open it up. As soon as you do that you're going to take an open ended and close it down.

Christina Barsi: Next up Lois has the groups prioritize three of the questions they came up with, all the while considering their goal of students and considering why they chose those three ,and what order those three questions were on their original list. Okay, back to Lois.

Luz Santana: All right, so we have some priority questions and there is something that we should do with those questions. So let's develop a mini action plan. So what I would like you to do is to put together a T chart and on the left side of the chart, write the word information on the right side, write task. Thinking about your three priority questions, in order to answer them, what is information that you need to get? In order to answer your priority questions what is information that you need to get? And then how would you go about getting that information? What are some tasks that you will implement in order to get it?

Luz Santana: We are going to share our work.

Barbara G.: Our first question is, are they shy, do they lack self confidence? And we changed that to how can I help the students be more confident in asking questions? A open question we changed to a closed was why are they afraid to ask questions? Are they afraid to ask questions because they are afraid of failure, being wrong?

Luz Santana: Three priority questions [crosstalk 00:17:43].

Barbara G.: Number one was, how can I get them to engage? Number two was how can I help my be more confident in asking questions? And am I sure they understand the question?

Luz Santana: And why did you choose those as the priority?

Speaker 12: So we chose the first one, how can I get them to engage because it seemed very solution oriented. We chose how can I help students be more confident because we weren't sure whether or not they weren't answering because they didn't know, or if they did know how could we get them to answer. So our last question was am I sure they understand the question, kind of throwing maybe my questioning is bad modeling for them. So I thought that was an interesting one for us to end on.

Luz Santana: What is your plan with the questions?

Speaker 12: We thought maybe getting their learning styles, because maybe they don't like the way that we're doing class, so maybe we could do more hands on before they present. So maybe an informal survey as the task for that. And then, I mean this seemed obvious, but we want their understanding and feedback. We didn't know how to phrase that other than just saying we want their voice to be heard. At least maybe their thumb to be heard. Because we said clickers and Plickers I didn't know what a Plicker was. It's like a iPhone app kind of thing. And for all you podcasters at home, I think that's P-L-I-C-K-E-R-S, Plickers.

Speaker 12: And then the information we wanted like what's the temperature of the room, what's the classroom climate? And then we thought the task could be like to say on the syllabus like, "No answer is wrong." Like this is how we gauge the classes, you know, knowledge and assessment by throwing out answers, asking more questions and then just kind of do maybe some pairing shares before they talk, because maybe they're afraid to get the wrong answer. So if they do a pair and then they both decided, oh that's what I had to, then they might answer. So that's what we came up with.

Luz Santana: And the last step is the reflection. So let's reflect on the work we just did.

Speaker 13: So what we learned was that asking question is difficult. So come up with good questions because I as an instructor usually doubt myself whether I'm asking a good question or a confusing question from students. So I try to rephrase my question several times to make sure that the students understand what I'm asking. And how we learn it I guess through this activity that was a good practice to see how we can come up with different type of question, close ended, open ended, and how we can basically work together and share our basically learning to reduce activity.

Luz Santana: Thank you.

Speaker 14: Something just came forth in my mind is when we ask questions of students, we ask questions that we definitely know the answer to. But when students ask questions, they might stump us a little bit. And then we have to come up with techniques like, well, does anybody have any thoughts on that? But it's just something that came into my mind that maybe that's what we do. And maybe that's, you know, maybe that influences how students ask question. I don't know.

Speaker 12: I was going to say we generally think of closed ended questions is kind of easy to grade. So we like to ask those on tests for example, and therefore they're valued less than open ended questions. But on the other hand, a closed ended question can lead to open ended questions. So they both have their value as we've discussed already. So that was something that just putting it together was new for us.

Speaker 15: What I learned was that, and I got it, where did I learned it and how is from this group right here, when they realize they're going are they, are they, are they, you are placing the blame on the student. And so what I learned was that we have to check ourselves at the door every day we teach and say, just because there are no questions doesn't mean there's something wrong with them. And so what can I do to make sure I'm answering every student's question, whether they ask it out loud or not. So really what I learned was remember, it's not their fault. It could be something I'm doing and what can I do to improve that?

Luz Santana: Okay, so that was the Question Formulation Technique process, which is a process that produces consistent results. So a hand to all of you.

Christina Barsi: Thank you for listening to the Magic Valley 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.