Speaker 1: Motivation is goal-oriented, whereas engagement is in the moment, and I think that students are missing that. I'm going to try to get them to just engage and not worry about whether this meets a requirement or not. That is what I'm taking away.

Liesel Reinhart: Welcome to the MAGIC MOUNTIE podcast. This is a podcast that's dedicated to helping faculty and other college employees as they try and navigate the challenging fabric of serving students, especially at Mt. San Antonio College, but everyone's welcome.

Christina Barsi: Hi, it's Christina, your co-host, co-producer of the podcast. Today I have a really awesome episode for you. It features a session from Fall Flex Day and it's called "Brain-Based Strategies to Enhance Student Engagement." The presenters were Laura Jacob and Rita Van Dyke-Kao. I actually got to sit in myself on this one and it was really fun to watch. It was very interactive, it was creative, and it was all based on brain science. If you're feeling like you want to shake up your classroom in this fall semester with some new interactive tools, then this is a really great episode to listen to. I think you'll really enjoy it. Here we go.

Rita: Welcome, thank you for coming. My name is Rita Van Dyke-Kao. This is my colleague, Laura Jacob. We are faculty members in the ESL department here at Mt. SAC and we're really excited to be presenting on "Brain-Based Teaching Strategies to Enhance Student Engagement." One of the leading figures in our field is Zoltan Dornyei and he is deeply interested in engagement. He was a leader in motivational studies, especially in terms of language learning. But he said, "You know what? Motivation, that's all good and fine but if students aren't engaged, it's going to cut through motivation and what we really need to study is engagement."

Rita: Think about what might be an accurate picture of the student brain in the 21st century? It kind of screams distraction, right? There's so many distractions in terms of technology and social media. This is from Zoltan Dornyei. He talks about, "The competing demands on the student brain in today's globalized digital age young people are bombarded with information through multiple channels, and the pace of social life has been intensified by the social media in an unprecedented manner."

Rita: These are kind of 21st century words like "globalized" and "digital" and "information" and "bombarded." Again, these are not really things that we saw in the past. That word "unprecedented" kind of gives you shivers. Like this is kind of new, right? As educators, how are we dealing with it? Are we teaching the same way? Or are we starting to maybe adapt in some ways so that we can help engage our students?

Laura: So then going back into Zoltan Dornyei what does he say and then this question, why engagement? What is engagement? What does student engagement mean? What might student engagement look like? The question is, why are we talking about engagement? Why are we not talking about motivation? The interesting thing is that Zoltan Dornyei has spent his life and his career talking about motivation. All of a sudden, he's switching to talking about engagement. Why? Why engagement? Why not motivation? He argues that in the fast-paced reality of the 21st century, our reality now, even high motivation can be easily canceled out by various distractions. If I were honest, I'd say, "Me, too."

Laura: You know, I get a phone call, or I get a text message, or I see something and I'm gone, right? My brain is in a different place, right? This is just reality of 21st century life. However, Zoltan Dornyei says, "If a student is engaged," this is what we want, this is what we're working towards, this is our goal. "If a student is engaged, this means that he or she is not only motivated but that his or her motivational drive has succeeded in cutting through the multitude of distractions and alternatives."

Laura: Then we come back to brain-based learning. What is brain-based learning, brain-based research, have to offer us? What does it offer us? What does it offer educators in the 21st century? Or if I were to ask a different question, how can we compete with the unprecedented competing demands for our students' attention? In essence, how do we deal with this? How do we deal with that foggy student brain that has competing demand with all the social media, with everything that he or she has? Although brain-based research began in the 1950s, exciting discoveries for educators have been made very recently. Brain-based research has a lot to offer us.

Rita: This is a quote from Zadina. She wrote" Multiple Pathways to the Student Brain" among other works. She has a background in education, so she's very interested in the educational implications, but she's also a brain researcher. Let's just read through her quote here. "Experiments in plasticity have proved that the human brain can indeed rewire itself as a result of experience. This plasticity is not limited to critical windows or to any age group. More evidence has corroborated plasticity to the point that now we are seeing amazing discoveries about just how much the brain can rewire itself. We are at the beginning of a new frontier in education."

Rita: We all know that saying, "You can't teach an old dog new tricks." Brain research just blows a hole through that, it says absolutely you can teach an old dog new tricks. The brain has this amazing ability to rewire itself. It's such a fascinating field because our brains are amazing. The more you learn about it, the more you're just in awe. But the implications for education are really what get me excited when I read about brain-based learning.

Laura: In the remainder of this presentation, we're going to talk about three key areas of brain-based research and what it means for us here today at Mt. San Antonio College, in the classrooms that we will be in this semester. Emotions, movement, and memory. What does brain-based learning teach us about the role of emotions and the learning process? What does emotions, what do our emotions, student emotions have to do with learning?

Laura: If you can turn to two or three people around you and talk about this question. What do you think the most common emotional states are in the classroom? The most common ones. What emotions are students bringing to the classroom? [crosstalk 00:06:59] All right. We want to hear back from you. What do you think? What are the most common student states? What are the most common emotions in the classroom? What do you think? What did you say?

Speaker 6: Anxious.

Laura: Anxiety.

Speaker 7: Overwhelmed.

Laura: Being overwhelmed.

Speaker 8: Indifferent.

Laura: Indifferent.

Speaker 9: Bored.

Laura: Boredom.

Speaker 10: Fear.

Laura: Fear.

Speaker 11: Confused.

Laura: Confusion. Okay. So the most common ones are and these are the most common student states, so the most common emotions brought into the classroom. Fear, anxiety, boredom, apathy, frustration, confusion. The most desirable emotional states for students to have in the classroom are anticipation, excitement, curiosity, celebration, enlightenment. The question is, how do we get there?

Laura: The traditional view of education. What do I mean by that? I mean, my mom was a teacher, so I imagine in her classrooms, I'm not saying my mom was a bad teacher, I'm saying when she learned how to be a teacher, the teacher education courses she took were probably done from a traditional view of education. It says that, "Students should leave emotions outside of the classroom to focus on real learning inside of the classroom." However, neuroscientists have found that the most effective learning involves cultivating and using positive emotions in the classroom.

Laura: Neuroscientists have found that students learn best when they feel a connection to the knowledge they're intaking and when academic content is meaningful to them. Neuroscientists have also found, so this is the other side, that when a student feels stress, it initiates the stress response and lessens the student's ability to perform. That said, there's two states; an approach state or an avoidance state. Brain-based learning says students are in one or the other.

Laura: The approach state is ideal for learning. It's when students have easy collaboration, they share, they laugh, they're fair, they're creative, full of interest, and open. Or in other words, when students are engaged. The avoidance state hinders learning. This is when students are anxious or fearful, when they're uncertain, embarrassed, and they might feel threatened.

Laura: This is three ways to build emotional connections to material taught in the classroom. These are not the only three ways, these are some ways among others. You can involve students in designing lessons. You could ask, "Would you rather write about this or would you rather discuss this?" You know your academic discipline, you know what's possible in your academic discipline.

Laura: Number two, relating material to the lives and interest of students. Because students bring in their whole life to the class, right? Number three, allowing students to solve open-ended problems through group work and projects.

Rita: Okay, so it's time for us take a quick brain break. We've been throwing a lot of information at you so we want you to reflect for a minute, silently. Think for 20 seconds, what are two things, themes or ideas, that stand out to you from this morning's Flex Day? Either from the opening session or from session one, so think of two things. Does everyone have two things? Are we ready? Okay, so we're going to do a little activity with this. I want everybody to stand up, walk across the room, find someone you don't know, and share those two things with him or her.

Laura: Now we're shifting to talking about movement. What does movement do for our brains? How does movement benefit our brains? Physical movement enhances circulation so that neurons get more oxygen and nutrients, enhances the production of new cells in the brain, impacts mood, cements memory, enhances connections between neurons.

Laura: What does this mean for us? Can we use movement in the classroom? In order to have our students' brains at the optimal level for learning, we should strive to ensure that some of our planned activities have a built-in component of physical movement, such as walk and talk. You can send students on a mini walk across campus to discuss the video you watched, to discuss an article, discuss an important topic, an issue or problem.

Laura: You can create stations around the room and have students move from station to station, change seats, partners or groups. You can do what we just did, share with someone across the room. Do you feel a little bit more awake, alive, engaged since you stood up and walked across the room and then sat back down? Actually, it kind of wipes the slate clean to intake more material. Any other activities or ideas for the classroom that would implement movement that you can think of?

Speaker 12: Doctor Zdinar Zandia, she was the one who gave me this idea, and it's just called "Do You Think Better on Your Feet?" So I actually have a slide in my lecture, it'll be shoes of some sort and I change it around every time so I try to find rain boots and really interesting shoes. But students have to pair up and it's usually after I've gone over kind of a complex maybe topic, and they have to explain it to each other. Or they'll pick one student and I'll give them some instructions on how they pick that student - the student with the longest hair, the student with the brightest shirt on - you're the explainer and the other student is the listener, and they have to explain the topic I just covered.

Speaker 13: I had them do news presentations based on a current topic that they all chose and researched and they were then the television reporters and that, got a lot of movement that way.

Speaker 14: In one of my classes I regulate doing an activity where we're talking about where electrons go in an atom. I actually take the students outside, there's actually some benches and I stand up in the middle, I move them around, I have them jumping from bench to bench, I throw chocolate at them and always in my feedback that's one of their favorite things of the whole class.

Rita: So let's talk a little bit about memory. What do we know about memory? Has anyone seen "Inside Out?" Pixar movie a couple years ago, it's like really cute, really lovely movie, but there's an error. In that movie it shows that there's a single place for memories in her brain, this is not accurate. Brain researchers know that actually memory involves multiple locations in our brain. Best learning and recall involves those multiple memory locations. That's one kind of myth that a lot of people believe that memory is just in one single place in our brain.

Speaker 15: Could I add something to that?

Rita: Sure.

Speaker 14: For example, if you're a heart transplant patient, we've had lots of examples of this-

Rita: Yeah.

Speaker 15: Of someone who didn't like jazz or hip hop or something has a heart transplant of a young person who died in an accident. All of a sudden they know how to play the guitar, or they can get into some kind of alternate music or something. So we know that there are memory events stored in a variety of locations in the body, particularly in the heart, in addition to the brain.

Rita: Thank you for that. How do we remember things? Really the goal is when we're learning that we're going to remember, not just tomorrow but, hopefully, long term, right? Permanent memory, long-term memory. The first section there is the sensory memory, we got stimuli right from our environment, within 0.5 to 3 seconds, we're going to forget it. However, if we attend to certain stimuli, we're going to remember a little bit longer.

Rita: So more working memory, about five to 15 seconds if we attend to a certain stimuli we'll remember, but then after 15 seconds we've forgotten. The real key there is retrieval, what we call review; review for the exam, review for the test. With retrieval, then we start to go into the long-term memory and that has an infinite capacity and it can be permanent, so that's the information processing model. Get a little geeky and sciency on you guys.

Rita: So is sensory memory what factors influence the brain to pay attention to certain stimuli and not others? As we're teaching, we want our students to attend to the material, the course material. We want them to remember certain stimuli. What sort of factors are influencing the brain?

Rita: Attention. Attention is selective and it's influenced by these three things. Novelty. Number two, intensity of stimuli, how intense is the stimulus and then lastly, movement, which we kind of participated in that activity earlier where we stood up, we had the oxygen in our brain, and we were able to attend probably better. Then number three was meaning and emotion, which we have also talked about quite a bit already, the emotions that are necessary for engagement or that are ideal for engagement I should say.

Laura: Plan activities that stimulate memory in these four ways. You can use as much sensory input as possible, you can have students do things, feel things, see things, smell things. Incorporate novelty into lessons and here we can use the technology that's available to us. We can use technology in the classroom, there's a lot of amazing technology we can use in the classroom, perhaps that's a different conversation.

Laura: Providing creative ways for students to chunk and associate information. This one's very interesting because in the past researchers thought seven chunks of information is the perfect number, the magic number. Actually, it's been discovered that two to four pieces of information is much better. Then, of course, revisiting concepts throughout this semester.

Laura: We want to ask you, what ideas or concepts impacted you the most? What will you try to incorporate into your classes? Serena, I wanted to hear from you. Can we hear from you? You had an interesting idea at the beginning of all this. You said you actually start with an online communication mode?

Serena: Well, I taught an Italian Culture Through Cinema class and it was 40 students and about half of them were international students. Getting students to discuss films was very difficult, and we had a short amount of time, too, to discuss. I moved the discussion assignment online, and I got much better participation and groups formed. You saw students would reply to the same student and I noticed, even in the classroom, it seemed like students already knew each other better and there was just a different feel. For me, too, as a professor, I was able to know my students right away. What they like, what they don't like, how they write, what they think instead of having to wait for someone to raise their hand and speak.

Laura: I like that. And we can do that, did you do that with-

Serena: Canvas.

Laura: With Canvas. So that kind of creating, incorporating maybe a hybrid model of teaching, so an online component and then an in-class component.

Serena: Because they feel safer online.

Laura: They feel safer online.

Serena: Because they can think about what they want to say, they can write it out and then they can post it, instead of just having to blurt out something, so they really feel safer online than in class.

Laura: We want to thank you so much for coming and for engaging in this important topic with us.

Liesel Reinhart: Hey, thanks so much for joining us for the MAGIC MOUNTIE podcast. We love your likes, we love your shares, and we love your comments, so please engage with our community, download from wherever you love to get your podcasts; iTunes, Google, RateMyProfessors. We're there and we want you to be back with us next week. Remember any opinions that are expressed in this podcast do not necessarily represent Mt. San Antonio College or any of its agents. We'll see you next time.