By Kelly Puente | January 2, 2019

SOME TEACHERS ARE ABLE TO BUILD DEEP emotional connections with students and inspire them to learn.

What does that look like in the brain? The University of Southern California is exploring that question and other connections between the brain and effective teaching in a new study launched this fall at Intellectual Virtues Academy, a public charter school with middle and high school campuses in Long Beach.

In a combination of psychology, teaching and neuroscience, the study will monitor brain activity, heart rate and other physiological responses in 40 teachers as they interact with students.

USC Professor Mary Helen Immordino-Yang, who is leading the effort, said the study is the first of its kind to combine classroom observations with brain imaging to uncover the deeper social and emotional work that goes into teaching.

“We know that just teaching teachers what to do in the classroom does not get you very far with student outcome, especially for adolescents,” she said. “What we want to show is that effective teachers are actually experts in adolescent development.”

To monitor their emotional state, teachers will wear special wristbands in the classroom that capture their heart rates and microscopic changes in sweat. They’ll wear a voice recording device to measure changes in their tone, and in a lab setting, they will undergo brain imaging scans as they perform various teaching-related tasks.

Immordino-Yang said strong feelings of inspiration, compassion and empathy can actually be seen in brain scans. The study aims to identify a correlation between those physiological responses and teachers who are associated with certain learning outcomes in students.

The study can help identify standout teachers on a cognitive and emotional level, she said, and those teachers’ methods can then be used to help others.

So far all of the teachers have been excited to participate in the scientific study, she added.

“I think it speaks to the need in our society to document what teachers know and recognize how difficult their job is,” she said. “With this study, we’re acknowledging that the work they do requires serious skill.”

The study will be conducted over the next three years and is funded in part by a $350,000 grant from the John Templeton Foundation.