

TEACHING STATEMENT

Tricia J. Ngoon

My core teaching philosophy is to provide a learning environment that ***encourages early exploration, emphasizes effective feedback, and utilizes equitable and inclusive teaching.*** During my graduate career, I have been a teaching assistant over 13 academic quarters for undergraduate courses ranging from lecture-based courses like Neurobiology of Cognition to project-based courses like The Design of Everyday Things and Interaction Design. I often take a leadership role in my teaching, managing teams of up to ten other teaching assistants, providing training on effective critique and teaching practices, and substantially improving course curriculum. From my own experience in helping students with confusions and struggles in web development, I took the initiative to design and teach my own undergraduate web development seminar as instructor of record. Finally, as Head Teaching Assistant for my department, I work with the UCSD Engaged Teaching Hub to develop training sessions and resources for both graduate and undergraduate cognitive science teaching assistants to implement scalable active learning strategies for more effective student engagement and learning.

Teaching Philosophy & Experiences

Encouraging Early Exploration: Both my research and teaching philosophies highlight the importance of exploration in creative thinking and problem-solving. I believe that exploration and the process of improving from mistakes are highly valuable for learning and improvement. I take a Socratic approach to my teaching, enabling students to generate their own hypotheses and ideas even before learning procedures or concepts. I create opportunities for low-stakes failure to encourage trying new ideas, regardless of whether they are optimal or correct. As an example, I had students in my Neurobiology of Cognition class draw a diagram of how they believed action potentials function in the brain prior to learning the concept. This activity opened the doors to peer discussion about different conceptions and informed me as an instructor about their understanding so I could tailor my instruction. Students also mentioned that seeing and discussing their peers' diagrams helped better prepare them for learning the concept later. In my teaching I strive towards creating an atmosphere that fosters a growth mindset and frames mistakes as learning objectives encourages greater motivation and challenge.

Emphasizing Effective Feedback: Personalized, specific feedback is vital for helping students learn and improve. Aligned with my research interests and philosophy, I aim to both model effective critique and teach critique as a skill. When giving feedback, I de-emphasize grades and focus on future improvement to encourage mistakes as learning objectives. I give feedback that is specific, actionable, and justified so that students know where they are doing well in addition to how they can learn and improve. I also train other teaching assistants in giving effective critique as the Cognitive Science Head Teaching Assistant. I employ techniques for modeling good feedback to students when they give peer critiques, providing critique prompts and suggestions and even improvisation techniques like the "yes, and..." strategy. Particularly for open-ended domains, I find that students appreciate critique that

gives them a sense of direction for improvement and helps them think critically about a problem. Using feedback as a learning tool and a learning objective makes for classrooms focused on improvement rather than perfection.

Utilizing Equitable & Inclusive Teaching: Every individual student has different interests, backgrounds, and knowledge levels. A one-size-fits-all approach teaching is ineffective for addressing this diversity. To address student diversity, I provide alternative means of engagement. This includes using tools like Kahoot and Padlet to enable students to participate and share their ideas without the potential anxiety of speaking to a large group. I give multiple and varied examples of assignments to show different approaches and structures. In teaching and grading, I highlight the importance of growth and improvement over grades or point values, taking into account personal circumstances and differing rates of learning. Even in larger courses, I often hold extra office hours to give additional critique or check in with students on a more personal level, allowing students to make up work or explaining grades to help them improve in the course. Over the many courses I have taught, one consistent thing mentioned in my teaching evaluations is the effort in ensuring that all students understand concepts and receive thorough feedback on their assignments.

Mentorship

Mentoring promising students in pursuing their research interests is one of the most rewarding experiences of my graduate career. My work with Michelle Lee and Nicolas La Polla examined problem-framing scaffolds for improving ideation resulted in conference presentations at ACM Creativity & Cognition 2019 and the UCSD Computer Science & Engineering Undergraduate Research Symposium. Michelle is now a Master's student at the University of Washington's Human-Centered Design & Engineering program, and Nicolas is a software developer for a pro-bono student engineering organization. My current undergraduate research assistant, Vivian Leung, is investigating exploratory patterning skills in preschool-aged children. We developed an interactive Wizard-of-Oz prototype to work with children remotely, discovering the particular design needs for children and building Vivian's design and programming skills. She is currently writing her senior honors thesis on this work with a publication submission in preparation. I have also had the pleasure of mentoring an early PhD student in a rotation research project. Samuel Lau worked with me in investigating how reconstructing an experiment from the perspective of a scientist can reduce fixation on surface-level experimental details. I served as his mentor in designing a rigorous web experiment and interpreting and situating results in the context of creative problem-solving and existing learning science research. This work was presented at ACM Creativity & Cognition 2019.

Community

I believe in building a strong community of passionate and skilled educators to advance higher education and research in a continuously changing world. As the Cognitive Science head TA at UCSD, my primary goal is to provide graduate and undergraduate TAs with effective teaching practices and a community dedicated to discussing the improvement of pedagogy within the department. I hold bi-weekly teaching chats to informally discuss

teaching-related issues such as student engagement or equitable grading and provide feedback on course materials such as syllabus drafts or lecture slides. I also work closely with the UCSD Engaged Teaching Hub to develop workshops and online resources to better prepare first-year graduate and undergraduate TAs in being successful instructors. Through these efforts, I create an open dialogue about how to improve student experiences and grow as educators

Courses to Teach

I am excited to develop and teach courses ranging from psychology to introductory programming. I am comfortable teaching courses I have previously taught and existing courses in both introductory computer science and cognitive science. These courses include **introduction to web programming, interaction design, social computing, research and statistical methods, learning sciences and technology, and applications of cognitive science**. I would also like to develop new courses both at the undergraduate and graduate level on topics related to creativity and learning such as a seminar on **creative cognition, learning and memory, designing for children, and wizard-of-oz prototyping**. In each of my courses, I want to incorporate real-world application and experiment with new active learning approaches to create engaging and inclusive learning environments.