

As psychologists and neuroscientists, we are presented with a unique opportunity: we can use methods and insights from our research to support the learning of our students. For example, my [Scholarship of Teaching and Learning \(SoTL\) research](#) has broadly examined how believing that intelligence can be developed through effort and experience (“growth mindset”) leads to greater academic efficacy and intrinsic motivation relative to believing that intelligence is fixed and cannot be developed (“fixed mindset”). In my joint first-author manuscript under review at *Teaching of Psychology*, my colleagues and I found that teaching and measuring intelligence mindsets by showing students where they fall on the traditional intelligence mindset scale and what language they use to describe their own intelligence is both empowering and insightful.

Indeed, much research has shown that interventions aimed at promoting growth mindsets can help underachieving students graduate on time and improve their grades (Yeager et al., 2019). Expanding on the mindset SoTL research, we are [developing a web-application](#) that categorizes language as belonging to each mindset, with which we hope to push students and educators worldwide to examine their approaches to learning. Moreover, we organized [an art exhibit of this research on the Perkins Student Wall](#) to show Duke students that they are not alone in their feelings of imposter syndrome and that imposter syndrome is real and pervasive, but ultimately, an inaccurate representation of their abilities and potential. With pedagogy-focused research and research-informed teaching, I hope to create inclusive environments that grow the potential of all students.

My goals as a Scholarly Teacher (Gurung, 2008) are thus as follows: I hope to foster critical thinking, life-long learning, and problem-solving skills in my students so that they are aware of the reality beyond media talk on “mind-reading” and other popular psychology headlines, can independently assess psychological articles and research problems, and apply theories to address these problems within and beyond the classroom. I aim to achieve these goals through three fundamental principles include 1) **creating a flexible structure with high, but clear, expectations**; 2) **engaging curiosity through applied scenarios**; and 3) **emphasizing community building** to lay the foundation for a diverse and inclusive environment that supports the learning for all students.

### **Creating a flexible structure with high, but clear, expectations:**

To create a flexible course structure that is responsive to student needs, instructors **must consistently assess student concerns and show that they matter**. Students

in all of the courses I have taught have filled out anonymous exit papers, which have probed both whether they learned the lesson takeaways and whether learning objectives were fulfilled as well as concerns and lingering questions over the material. These concerns mattered, so they were always addressed at the start of the next class and without precipitating fear of judgment because of the anonymity.

These exit papers allowed for more immediate assessment of ongoing student learning, while at a broader level, every course I taught has also included midsemester feedback to identify how to better support student learning in the future. For instance, within the eight-person Introduction to Cognitive Psychology course that I taught as instructor of record, students expressed a desire to slow the course pace, focus more deeply on the content, and shorten and clarify the summative assessments. Subsequent changes to course design were effective: not only did both course and instructor ratings improve, but [all eight students also strongly agreed](#) that I *"made positive changes to the course based on midsemester feedback"*. Similarly, within the Introduction to Statistical Methods in Psychology lab sections I TAed, at midsemester, my thirty-five students wanted shorter labs with more explicit examples for homework assignments and more discussion of homework assignments. By the end of the semester, [30/31 of my students](#) (4 n/a responses) indicated that I improved labs and took their midterm feedback into account. At their most basic level, these techniques allow instructors to **understand whether students feel heard in the classroom**.

A flexible course structure also involves **scaffolding so that one mistake does not ripple throughout the semester and that making, but also improving and learning from, mistakes becomes an integral part of course design and values**. Scaffolding assignments in particular helps ensure that students will feel less pressure on summative assessments, lowering the stakes especially in circumstances when anxiety can cause negative consequences. For instance, in my cognitive psychology course, students slowly built their way towards their final science communication pieces, where they described research done at Duke for a lay audience and summarized other research for a scientist audience, receiving feedback on their outlines and first drafts as well as practicing writing multiple paragraphs for other articles. [All eight students](#) rated the outline as being *"extremely useful"* and explicitly expressed enjoying *"the idea of breaking down assignments"*.

Scaffolding can also occur in terms of the course content. As a section instructor for twenty-five Introduction to Cognitive Psychology students, I was responsible for discussion of academic articles and online psychology labs that the instructor of

record assigned students to read and complete. To acclimate students to the course structure, the other TA and I first included a lesson on reviewing parts of the brain, which the instructor would frequently discuss in lecture, and then covered how to read academic articles and how to best study, based on cognitive psychology research. The first three weeks of the class were thus spent giving students a foundation for the rest of the semester. [Students wrote](#) that they appreciated having time for in-depth breakdowns of the material and the toolkit they developed in section to understand the articles they were assigned.

Finally, while the flexible course structure enables student agency, **incorporating many opportunities for formative feedback enables the setting of high, but clear, expectations.** Together, feedback can work hand in hand with scaffolding assignments to provide structure that supports each student. Whenever I gave feedback to my cognitive psychology students or the twenty-nine psychology and neuroscience students in the Thesis Distinction class that I TAed, I ensured that the feedback was transfer-oriented. This meant identifying examples within the text where I thought students clearly communicated and also providing points to focus on in the future. [Student feedback](#) suggests that they improved their theses and science communication skills as a result.

### **Engaging curiosity through applied scenarios:**

One of the most important parts of course design is ensuring that **students perceive the direct relevance of what they are learning.** Using students' own data can help. For example, in the Psych Stats course, students filled out an introductory survey assessing how they would rate the intelligence of hypothetical students who succeeded either by expending a lot of effort or none at all. Subsequent lab lesson plans then used these data so that students could probe their own beliefs about how effort relates to intelligence, initiating a discussion on the myth of genius in American culture (Dweck, 2006).

Designing the course to include the application of knowledge to everyday scenarios is fundamental to engaging student curiosity. For example, the first half of my cognitive psychology focused on basic science, while the second half focused on applying that knowledge to policy, education, and history. Unsurprisingly, the second half was more frequently cited among favorite topics. Moreover, while students in the cognitive psychology sections I TAed did not love the academic articles the instructor had chosen, they expressed appreciation for the way we TAs applied the material to everyday examples, making the articles feel less dense and more

informative. Observation of my cognitive psychology sections from a [Political Science](#) and an [English](#) graduate student indeed noted that the use of demonstrations within the class helped relate student personal experience to lecture concepts.

Finally, incorporating applied scenarios into course design can introduce new **professional development opportunities** for students. The goals of my cognitive psychology course were for students to develop skills as critical consumers and communicators of academic research. To fulfill these goals, all students produced publishable summaries of Duke research on the Duke research blog (see examples [here](#) and [here](#)). During this process, students worked with the Director of Research Communications, highlighting a new career opportunity in science writing. Not only does including applied scenarios highlight the real-world relevance of ivory tower research, but it also challenges student thinking about how they can use the skills they develop and the material they learned outside of the course.

### **Emphasizing community-building to create inclusive environments:**

What makes for ideal teaching is not only showing knowledge and competence, but also **building community to support students and ensure they see themselves in the field**. My cognitive psychology students summarized Duke research so that they could feel included in the Duke community and know the cool work done at their own university. Their class website featured the photos of the Duke researchers so that students could see themselves in the science, and the Duke academic articles were about equally split in the distribution of male- and female-identifying scientists. Students also profiled underrepresented cognitive psychologists for Wikipedia so that we could carve out worldwide spaces for all scientists to belong.

Moreover, flexible course structure and applied scenarios can also work hand in hand with building community. Formative feedback opportunities in my cognitive psychology course did not only include feedback from me as the instructor, but also from peers; most lesson plans included at least one opportunity to either discuss the material together or give one other constructive feedback on science communication pieces. Students were consistently brought into the learning process as part of a push for **open pedagogy**. Their course website was updated on the daily, showing students their own ratings of whether the articles covered were interesting and accessible. Course evaluations suggest that these policies have been successful, with [students in all of the courses I have taught more often strongly agreeing](#) that my courses have “*a welcoming and inclusive classroom environment*”. Indeed, one common theme among student feedback has been that I am “*very open to questions*”

and “*approachable*,” and all students within my cognitive psychology course strongly agreed that their class “*feels like a community*.”

### **Looking Forward:**

Learning, for students and teachers alike, does not end at the classroom doors. Teachers must continually improve themselves and adapt to the challenges posed by technology and changing societal demands. To this end, I have sought out specialized training. I am a scholar in the [Certificate in College Teaching](#) program, which trains students to become better college teachers through coursework, workshops, and peer-evaluated teaching, and was a fellow in the [Preparing Future Faculty](#) program, which provides students with hands-on, institutional knowledge about the expectations and duties of new faculty. I am also working towards a [Certificate of Accomplishment in Teaching Writing in the Disciplines](#), which trains teachers to help students develop writing skills across disciplines. Furthermore, I read higher education journals and blogs like the *Educational Psychologist*, the *Teaching Professor* blog, and the *Chronicle of Higher Education* for ideas on how to improve my teaching. Finally, I have attended teaching-oriented conferences ([National Institute on the Teaching of Psychology](#), [Elon University's Teaching & Learning Conference](#), [Duke's PsychOne](#)) as well as workshops and forums (e.g., [How to Be an Ally](#), [Diversity and Inclusion in the Classroom](#), authored by me: [Becoming a Better Teacher: Trans\\* Inclusive Pedagogy](#)) that encourage the creation of safe spaces. When students feel safe, they engage with the material, ask questions, and learn more. Extending beyond the classroom, learning is a culture that we can all champion in our continuing development as scholars and critical thinkers.