

Teaching philosophy: Kim Hochstedler

As a statistician, I use my fluency in analytic methods to solve problems in applied disciplines. As a statistics instructor, my goal is to prepare students to apply quantitative skills to real-world problems in many areas. Applied fields of research are rife with material that grounds theoretical statistical topics in tangible examples, enabling students to continue applying their knowledge outside of the classroom. It is my job, as an instructor, to make explicit connections between the learning goals and how students can utilize their new knowledge in a future career.

When students interact with real-world examples, they understand applications of theoretical topics and why that topic is important. In a statistics lab I led, students were learning about the assumptions required to perform two types of statistical tests, but struggled to differentiate between the tests in a theoretical framework. In response, I discussed how I chose between the tests for a clinical study. The students applied each method's assumptions in the study context and selected the preferred test for the analysis. Practicing the application of material enables students to internalize their learning and continue applying concepts outside the classroom.

Applied examples are one way that students can integrate classroom knowledge with topics that interest them. To ensure that course topics remain relevant, students should also leave the classroom able to advance their knowledge. This is especially important in statistics, where adapting to computational advances is key to a successful career. In my classroom, I explicitly teach approaches for continued learning. For example, my courses often use open-source statistical software. In class, I showed students which websites were helpful for learning coding strategies and described how to install new features for their software environment. Students shared their screens, and I guided them through the process of finding help for software

problems. In these sessions, I explained that searching for help is a skill I wanted them to develop.

My emphasis on applied examples and continuing learning is accomplished through course design that makes learning goals transparent. Frequently, the stress students experience from their coursework is due to factors outside of the difficulty of the material. For example, students often struggle to grasp theoretical statistics concepts unless they know *why* they are learning something. Understanding *why* motivates learning and rationalizes assignments. Without explicit connections between assignments and learning goals, formative assessments feel like traps rather than opportunities to demonstrate knowledge. As such, I design syllabi with explicit connections between learning goals and assignments. Additionally, I highlight tangible products, like statistical reports, that students leave my class with so they understand that assignments are evidence of skills for employers.

The practice of statistical analysis does not exist in a vacuum, and nor does effective learning. As an instructor, my emphasis on examples and continued learning helps students draw connections between classroom topics, assessments, and their academic path. With learners entering my classroom from all disciplines, this strategy provides students with the skills they need to pursue their own passions.