

Teaching Statement

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I am passionate about undergraduate teaching and excited to continue developing my teaching knowledge and practice. However, the concepts behind my philosophy have remained steady:

1. A welcoming, supportive, and collaborative environment sets the stage for learning
2. Serving diverse learning styles enhances cognition and best achieves learning goals
3. Coursework that transcends the subject cultivates well-rounded world citizens

1) A welcoming, supportive, and collaborative environment sets the stage for learning. I try to break down barriers, embrace diversity, and foster curiosity to form a community of learners where I become the “guide on the side” as opposed to the “sage on the stage.”

To lighten the mood in the GIS lab I taught, I gave students party hats (on which they wrote their names) instead of name tags. This not only facilitated easier name-recognition and attendance monitoring, but made it easy for me to break students up into groups and ensure that groups were not always the same (using hat color). Guest speakers were also asked to wear a hat. While the hats did not directly impact the course material, they broke down the barriers between instructors and students. Since GIS can sometimes be a dry and intimidating subject, I was keen on lightening up the classroom atmosphere. During the final day of class, a number of students wore their hats, confirming their appreciation for the hats in the classroom.

2) Serving diverse learning styles enhances cognition and best achieves learning goals. I utilize Bloom’s taxonomy to target multiple levels of cognition and backward design to ensure alignment between my learning goals and teaching methods. I then employ multiple forms of active learning to foster intellectual and physical engagement with material. This approach helps students build multifaceted conceptual models that stick after the exam.

When designing and teaching the lab sections of a course in introductory GIS, I integrated problem-solving on the computer with visual and hands-on metaphors for GIS concepts. For example, one learning goal was: *Describe why all projections are distorted*. Projections (the transformation of a 3-D surface into 2 dimensions) are a notoriously difficult topic for students and GIS professionals alike, and my goal was to design an activity that provided a physical reference to the distortion inherent in projections. I asked students to peel oranges and observe that shape and area cannot both be preserved when flattening the surface of a sphere into 2 dimensions. I then had students display the Earth under different projections on their computers and describe the differences they observed. I shared this idea with colleagues, who now use this activity in their own classrooms across multiple campuses. I have also supported active and inquiry-based learning in a fire science course, incorporating current events, scientific articles, role-playing, debates, experimentation through live fire experiments (such as match board “forests”), and participation on prescribed burns to reinforce learning goals.

3) Coursework that transcends the subject cultivates well-rounded world citizens. I believe that it is every teacher’s responsibility to develop the curiosity, critical thinking, problem solving, communication, and self-confidence of their students. These are life skills that will benefit students wherever they end up, making them more informed members of society.

As part of a lab in wildfire science, I wanted students to understand the various stakeholders that could be involved in a decision-making process about how to reduce fire risk and restore forest and ecosystem health at the community level. Each student researched and took the role of a different potential stakeholder (many brought props and costumes as well). We held a mock town meeting where stakeholders addressed the wider community, explaining why their desires were in the community's best interest. This activity was a favorite among students because it incorporated creativity and independence, while demonstrating the challenges of reaching consensus among stakeholders and values. Students practiced independent research, public speaking, debate, and critical thinking in a relaxed and fun atmosphere. This activity brought a few quieter students out of their shells: excited by their roles, they spoke up more than usual in that and subsequent discussions. I believe that fostering life skills is as important as the course material itself, and helps build productive and caring members of society.

I incorporate diversity into student assessment and maintain alignment with learning goals and outcomes through planning and rubrics. I use oral presentations, debates, discussions, lab reports, projects (including proposals), quizzes, and written exams to assess a variety of skills and cognitive levels, and am always on the lookout for other active learning techniques. As part of the introductory GIS course I developed, students spent the semester building a tool library, which they could reference during labs and the final exam. This was both a method of assessment and a resource that students could take with them into the job market or utilize in future projects that rely on GIS analyses. I also believe strongly in assessing my own teaching, and check in with students informally and through mid- and end-of-semester evaluations. In this vein, I maintain a teaching portfolio containing teaching evaluations with reflections and notes from a classroom observation (available at www.AnuKramer.com/teaching).

At the University of Wisconsin-Madison, I have had the opportunity to collaborate with graduate students, supervise student workers, and mentor one of these students for her capstone project in the GIS Certificate program on campus. I concurrently took a multi-semester course to improve my mentoring and leadership skills, and was able to apply many techniques and concepts from class directly toward fostering these relationships. Working more closely with students has been rewarding of its own accord, but has also provided insight into different learning styles and approaches I could take in the classroom.

I believe strongly in fostering student interest, participation, and genuine learning in my class, but also developing problem-solving and self-confidence that students benefit from no matter where their lives take them. Having experienced education with a small student-teacher ratio and strong support system, I have felt the joy of understanding the material, producing quality work, and knowing that someone cares. I have also seen peers lose confidence in themselves and fall through the cracks, and will always strive to make every student feel that they are an important part of the classroom and have the power to succeed.