

Teaching Philosophy, Experience, & Evidence of Success

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I believe good teachers are effective because they genuinely care about their students' learning, and are constantly working on expanding and improving their teaching techniques. Perhaps the most important challenge in any discipline is to make a topic interesting and relevant; devising creative ways to do that, for different subjects, diverse classrooms, and changing times, is what makes teaching constantly engaging.

I am a firm believer in significant learning experiences¹, and always strive to include the bigger picture in any teaching I do. I encountered plenty of content without useful context during my own undergraduate degree, and am well aware of how quickly I forgot it afterward. I think content should be set in an interdisciplinary, socially-embedded context that includes affective and ethical considerations. I also think students get the most out of a topic when they are given a sense of the historical and philosophical underpinnings; knowing how others have struggled with big ideas and knowledge engages students and helps them form their own views. Good courses should provide *ah hah* moments that change the way that students experience the world.

I believe active learning is important, even in a traditional lecture setting, and I am always looking for new ways to incorporate it into my teaching repertoire. In large classes, quick think and short writing activities can improve student engagement, as can interactive technology like clickers if used thoughtfully. In smaller classes, I use a variety of teaching strategies, including group work, discussions, activities and mini-lectures, all designed to help achieve specific cognitive and behavioral goals. I have been involved in a wide range of curriculum development, and believe in clear learning objectives and a backwards learning (understanding by design²) approach.

Although I don't believe technology is a panacea for educational challenges, I do stay current, and have had considerable success teaching blended courses that incorporate the best of online and classroom learning. I keep up with a variety of teaching and technology newsletters including Tomorrow's Professor Today from Stanford, Profhacker, and academic journals in science and environmental education. I think in-class technology such as interactive whiteboards, adaptive learning software, and audience response systems can all be useful as long as they are incorporated thoughtfully and with clear pedagogical goals. I also believe open-source software can play an important role in diverse education and social justice, and whenever I can I use free options such as LibreOffice, Zotero, and the R Statistical Environment, so I can better interact with students and colleagues who don't have the software budgets a large university or school system provides.

1. Fink, L.D. (2013). *Creating Significant Learning Experiences: An integrated approach to designing college courses*. San Francisco: Jossey-Bass.
2. Wiggins & McTighe. (2005). *Understanding by Design*. Alexandria, VA: ASCD.

Teaching Experience

Higher Education Teaching Experience:

- University of South Florida Instructor - Top rated instructor of 4000 level science education courses, 17+ sections taught..
- Undergraduate Mentor – science mentor for Project Pride male and minority preservice elementary education undergraduates.
- Intern Supervisor - Supervised teaching interns at a Florida middle school (6-8).
- Classroom Observer – Involved in a variety of classroom observations at different schools including the Reformed Teaching Observation Protocol (RTOP).
- Curriculum Research Assistant, Florida PROMISE Grant - Designed and edited teacher training materials based on the new Sunshine State Standards for science and mathematics.
- Biological Oceanography Teaching Assistant - TA for graduate level marine science course

Other Teaching Experience

- 2013 Regular substitute (STEM courses Grades 8-12); All Saints Academy, Lakeland, FL
- Communications Contractor, Southwest Florida Water Management District - Designed and delivered water-related education to a wide range of district schools.
- Marine Science Instructor Oceanography Camp for Girls - Ran sea canoeing expeditions and beach exploration for middle schoolers.
- Field Instructor, The Yosemite Institute, CA - Designed curricula and taught visiting classes (Grades 4-12) for this respected educational institution.
- Intertidal Quadrat Studies Biologist, British Columbia, Canada
- Sea Kayak Instructor, British Columbia, Canada & Belize
- Scuba Instructor, British Columbia, Canada & Belize
- Science Officer, Coral Cay Conservation, Belize
- Marine Science Instructor, Island Institute, WA

Diversity

I have over two decades of teaching experience with groups ranging from grade 4 through high school, as well as college, adults and elders. This includes direct experience with a large diversity of students, particularly in California, where I taught students from private schools in Beverly Hills, urban public schools in East Los Angeles, and rural schools in the Central Valley. My father was in the military and I have lived in a wide variety of cultures and bioregions. Some of the many people I have lived and worked with include environmental educators in California, loggers in British Columbia, Garifuna fishermen in Belize, school teachers in rural and urban Florida, and factory workers in industrial Ontario. Although I never did get the hang of Belizean Creole, I learned some French as a teenager and an ever-increasing amount of Spanish since then. I have traveled extensively, and think open-minded people can appreciate, and learn from, just about any culture they encounter.

Earth smarts, the educational framework for socioecological literacy that I designed for my dissertation, specifically recognizes the importance of cultural and biological diversity to the resilience of systems. Respect for diverse cultures is explicitly included, and it also recognizes the value of empathy for different value systems, as well as the importance of effectively addressing multiple perspectives. This appreciation of diversity plays a role in my current research interests, as I continue to consider the value of alternate ways of thinking, particularly indigenous science, resource management, teaching, and sense of place. This

includes ongoing research on the role that education and culture play in the difference between island nations that are able to maintain healthy ecosystems (such as the Commonwealth of Dominica), and those that struggle with serious environmental degradation. I am also interested in future research on coyote mentoring, a range of teaching techniques used by indigenous societies across the globe.

I apply the principles of diversity directly to my teaching. If students are made to feel safe in class, if their views are respected, then rather than being threatened by those with different values, perspectives, and worldviews, we can all learn from them. This is one of the most important aspects of the face-to-face college experience, particularly for young people who have not been exposed to many other cultures yet. I believe the things that I teach, like scientific reasoning, earth smarts, and environmental science, are powerful and important tools for success and wellbeing, and everyone has the right to learn them. Mindful of the challenges I have faced, I always try to incorporate free software and open learning materials into my teaching and research, to make it easier for those who struggle to pay for new technology and texts.

Evidence of Successful Teaching

Bryan... also has the highest evaluations (top 5%) in his teaching. Other graduate students use many of the materials and modules he has developed for his courses and he is often invited to deliver guest presentations within the college of education.

Dana L. Zeidler

Professor & Program Coordinator of Science Education, University of South Florida

Past President, National Association for Research in Science Teaching

A sampling of university level student comments follows:

Teaching Elementary Science has been, by far, the most enjoyable and worthwhile course I have encountered since enrolling in the College of Education. (K. Castner)

I can HONESTLY say that out of all my classes this semester, this is the only class that has actually made me feel more prepared to teach! (M. Ward)

The teaching demo classes were my favorite part of my college career... This career choice would not have even crossed my mind if it wasn't for this enthusiastic class. (S. Jensen)

This is my last semester in the college and I must say that this was one of the best classes I have taken in the college. You made me really change my previous views on science to find a new love for the subject. (C. Zelasko)

We had lectures, observations, fun classroom activities, peer to peer teaching, and usually good discussion. This is something that I did not expect from an undergraduate class... I found the myth lecture to be my favorite because I learned more about science from that lecture than all my years in high school. (M. Carnevale)

To be honest, the thought of taking this class frightened me, but it has made me much more confident in my abilities. (N. Gonzalez)

I have taken many upper level scientific courses in my academic career; I never thought the science class to force me to really think about science would be an elementary methods course. (P. Calentine)