Teaching Symposium Abstracts

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UC SANTA CRUZ | Teaching & Learning Center

TALKS

The Importance of Purpose for Learning

Author: Barbara Rogoff

Abstract: This project focuses on the importance of students having a compelling purpose for learning. If one's efforts contribute to a community, it is especially likely to engage students, especially for students from a number of backgrounds where community-mindedness is emphasized, who are often underserved in higher education. My talk is based on my decades of research on how people learn, some of which is the basis of a three-minute research video that I made with an interdisciplinary group of UCSC grad students and a faculty colleague: https://stemforall2021.videohall.com/presentations/1910.
I will provide two examples of how I incorporate this idea in my undergrad classes, by building the classes around projects where students share their learning (interview a classmate; make a video for the public). The idea is for the students to learn the material not for an arbitrary reason (a test or essay that is only for the sake of evaluation), but to do a good job of something interesting that is shared with other people than the instructor.

Formative Field Experiences: Bringing Field- and Inquiry-Based Learning to First-Year Students in Biology

Authors: Abraham Borker, Ingrid Parker

Abstract: Within ecology and evolutionary biology, field-based courses decrease demographic achievement gaps, increase graduation rates, and build persistence in the discipline. We present efforts to scale formative field- and inquiry-based learning experiences to all first-year students in the major with a new course, BIOE 20F. We explore the joys and challenges of designing for equity, distilling curriculum and science skills into an introductory course with no prerequisites, and scaling an immersive field experience for 65 students per quarter.

The course reflects the Five “I’s” of equity-minded field courses: Inclusion, Immersion, In-teams, Iteration, and Inquiry-led. The course requires no previous experience, course fee, or equipment. We introduce students to an experiential learning framework and an intentional focus on developing skills through iteration and reflection to support their metacognition of science practices. First, students develop a foundation of natural history and observation skills while building connections with each other, local biodiversity, and the land. Second, students are trained in experimental design and have two successive opportunities to lead the entire scientific research process. For each, they create original ecological research questions based on their observations, collect data, and present findings to their peers.

Evaluations (SETS) report a supportive learning environment where students take on agency, challenges, and risks, as well as deeply engage with hands-on activities in both natural history and research. SETS identified some challenges, including a need for more structure in field journaling assignments and requests for deeper immersion and more class periods than we could provide. Collaborating researchers are collecting data from pre-post surveys, reflections, and interviews to guide future course iterations.

Transferable takeaways to other disciplines include the value of a skill-based curriculum and experiential learning framework that puts students at the center of their learning. Authentic, immersive settings for experiential learning exist in other disciplines and present unique challenges.

Transforming the Cultures of Research and Teaching in an Impacted Computer Science & Engineering Department through Graduate Student Peer Instruction

Authors: Harikrishna Kuttivelil, Andrea David

Abstract: The Research and Teaching course (CSE 200) is required to be taken by all incoming graduate students in CSE, and has always aimed to provide students with basic skills in research and teaching to prepare them for their graduate career. However, historically, both graduate student and faculty engagement with CSE 200 has been low. With recent bursts in undergraduate enrollment elevating pressure on teaching and undertaking of new high-impact research, it is now more necessary than ever to effectively prepare graduate students for success in the research and teaching aspects of their graduate career.

To address these challenges and shifts, we — as graduate students ourselves — radically redesigned CSE 200 to be taught by graduate students for graduate students. The redesigned course introduced students to practical research and teaching skills and resources through active learning and collaborative experiences, while building community among the diverse cohort of students. The redesigned course consisted of both active lectures — which included presentations, workshops, and guest speakers — and discussion sections — which included collaborative discussions, small group activities, and application of concepts to the immediate contexts they were in. Student feedback of this iteration of the course was very positive, highlighting its usefulness, discussions, community-building, and being taught by fellow graduate students as key features of students' positive experiences. Constructive feedback indicated room for improvement in international student engagement, effectiveness of assessments, and the timing and organization of certain course concepts.

This peer-instructed version of CSE 200 was also intended to be taught by rotating sets of graduate students who have developed their knowledge of inclusive, equitable, and effective teaching through the Graduate Pedagogy Fellowship (GPF) program by the Teaching and Learning Center (TLC), creating a pathway for new CSE fellows to apply their evolving knowledge to continuously build on and improve CSE 200 for new generations of graduate students.

Stop Making Your First Class Your Worst Class

Author: Nathan Altice

Abstract: Remember the strange mix of excitement and apprehension you had as a student on the first day of class? Will the class be anything like its description? What's the professor like? Will I enjoy being here two or three days a week, or will it be miserable? Now think about how we, as teachers, treat our first day of class: schedules, syllabuses, Canvas, policies, the minutiae of process. It's dreadful, and it's almost guaranteed to dissipate any enthusiasm students might've had for your class. And most of us follow this pattern because it's the pattern we learned from our own teachers. But it doesn't have to be that way. In my talk, I'll introduce my experiments with a new style of first-day communication, one that tries to harness students' excitement and (hopefully) motivates them to return each day with that same sense of enthusiasm. Stop making your first class your worst class!

Modalities of Knowledge Distribution: Utilizing Arts-Based Approaches in an Ethnic Studies Classroom

Authors: Brittney Jimenez, Alycia Ellington

Abstract: Educators often use peer teaching via verbal and written forms of communication to measure students' understanding of course material and concepts. If they can explain to one another in these ways, doesn't it show they've understood the topic? What if we explored alternative avenues of engagement for students to demonstrate their understanding of course material to one another? Through this, we open opportunities for students to demonstrate active-learning-motivated peer-to-peer education in a way that engages alternative forms of understanding and student learning. Utilizing this approach to active learning works to illustrate creative ways to engage students while, most importantly, taking into account different ways of translating the world. In this presentation, I will give you a snapshot of an arts-based active learning lesson I facilitated as a Teaching Assistant in the course LALS 54 under the advisement of Dr. Carlos Martinez. In addition to the written report, we restructured the students' final project to ask them to create an infographic, or campaign poster, on a health issue of their choosing that was impacting the Latine community. In designing their project, students were challenged to include the history of this issue, relevant information about this issue's intersection with the Latine community, and to propose solutions to this issue. The course ended with an end-of-quarter celebration and gallery walk, where students' final projects were printed and displayed around the classroom for their peers. Reimagining the final project to include an active learning segment allowed students to be experts on their chosen topic and envision how they might illustrate their knowledge to their peers in class and, per the prompt, the broader community. My presentation concludes with the feedback I received from students about this assignment and plans for a future edition of this assignment.

“Create your Own Asian American History Lesson Plan”: Authentic and Transparent Assessment in an Upper-Division History Course

Author: Meleia Simon-Reynolds

Abstract: During spring 2023, I participated in the Teaching and Learning Center’s Course Design and Delivery Certificate Program, which provided me with the opportunity to engage with antiracist approaches to assessment design. During summer session 2023, I served as a graduate student instructor for History 106B: Asian and Asian American History, 1941 – present. I aimed to increase student learning by creating a final assessment that was “authentic”— it would invite students to apply what they learned in a new and realistic situation. With departmental learning objectives focused on primary-source analysis and secondary research and past observations of History students’ post-graduation career goals in mind, I developed a final assignment in which students create a lesson plan on a topic in Asian American history for K–12 classrooms. I further connected the assignment to “real-world” applications by asking students to engage with current legislation and public discourse regarding teaching Ethnic Studies. Through this framing, students came to understand the assignment as not just a platform to demonstrate and hone their historical skills, but as a way to enact social justice and antiracist pedagogies. I found that the majority of students met or exceeded the assignment’s learning outcomes. This is reflected in students’ grades as well as in their SETS responses. I believe that students’ positive assessments of their own learning were a result of the assignment’s transparency. In this presentation, I will discuss the ways I centered transparency by clearly communicating skill relevance and assessment criteria and scaffolding tasks into manageable chunks throughout the five-week session. I will also ask for feedback on ways to improve this assignment as I plan to teach the course again during summer session 2024.

Community-Engaged Pedagogies to Support Experiential Learning

Author: Alison Hope Alkon

Abstract: Prior research conducted at UCSC has demonstrated that community-based experiential learning can amplify a sense of belonging and improve student outcomes for first-generation and underrepresented students, especially when conceptualized through the lenses of critical citizenship and social justice (Langhout et al 2023, Beckett et al 2022). Grounded in the pedagogical approach developed by the Community Studies program over the past 50 years, this presentation will summarize various strategies that bring the community into the classroom and the classroom into the community in order to support this approach. Strategies vary in scope from “small teaching” approaches (Lang 2021) to those that demand a profound reworking of our curriculum and teaching philosophy. Faculty can support social-justice-oriented community-based experiential learning through a pedagogy that emphasizes the value of student voices and lived experiences, emphasizes a growth mindset, invites those working in community-based organizations to present as guest speakers or via existing presentations, and explicitly recognizes the need to build community, solidarity and kindness in the classroom. Students practice the skills of community engagement and deep listening with one another as a learning outcome in and of itself, and to prepare them to learn from, and with, community-based organizations. This process can also be energized by the inclusion of metacognitive strategies such as ethnographic research and reflection that require students to track their own intellectual and emotional responses to their preparatory and experiential learning.

Works cited:

- Beckett, Linnea K., Flora Lu and Sheeva Sabati. 2021. Beyond Inclusion: Cultivating a Critical Sense of Belonging through Community-Engaged Research. Social Sciences. 11, 132: 1-23.
- Lang, James. 2021. Small Teaching. NY: Jossey-Bass.
- Langhout, Regina D, Miguel A. Lopezzi, and Yu-Chi Wang. 2023. “Not All Service Is the Same: How Service-Learning Typologies Relate to Student Outcomes at a Hispanic-Serving Institution.” Journal of Higher Education Outreach and Engagement. 27(2):73-90.

Collaborative Case Inquiry — A Willingness to Wonder

Authors: Johnnie Wilson, Sumita Jaggar

Abstract: The use of case studies has long been part of teacher learning and teacher preparation. In our teacher preparation program, our student teachers present cases of their own teaching to peers. Working together in collegial conversation, student teachers work through problems of practice appropriate to their development, needs and interests through shared inquiry. Collaborative Case Inquiry (CCI) builds in beginning teachers a productive stance towards collegial discourse and problem solving that should enhance the quality of their teaching throughout their careers. As teacher educators, we engage in CCI as well. We regularly meet and share cases of mentorship and supervision, setting out our own problems of practice in order to improve our work with student teachers. We have bettered our mentoring practices as a teaching community through this shared endeavor.

In this presentation we will focus on two aspects of this work that our beginning students have said truly moves their teaching and development. The first is the growing confidence they find in sharing their mistakes and struggles as material to work from to improve their teaching. Working from the idea that teaching is naturally a mistake-making activity gives grace to our beginning teachers to take on useful challenges to grow in their teaching. The second is the richness of teaching problems that are available for consideration as they allow some vulnerability in the sharing of their teaching with peers. This shared acceptance of some vulnerability in collegiality allows questions about practice to be raised, questions that might normally be avoided or not considered in most approaches to beginning teacher learning. Our beginning teachers raise and consider these, together, moving their learning and development.

Network of Support: Building Social and Technical Cohesion in Remote Project-Based Learning

Author: Allen Riley

Abstract: Following the cancelation of publicly-funded summer youth programming in New York City in the summer of 2020, Beam Center offered “Future Humans,” a free remote project-based learning program for K-12 youth based around building fantastical cyberpunk costumes at home with a physical computing kit, creating stories, and building in a custom online platform. I led the transformation of Beam's historically in-person approach to collaborative hands-on projects into a network of support that incorporated a fine-tuned project kit that was delivered directly to more than 400 participants by staff and volunteers. Our approach sought to maximize inclusiveness by enabling participants to asynchronously build their projects, create stories and drawings, and build and pursue goals within their co-created worlds. They were simultaneously able to experience the benefits of community attention and care through a multi-modal approach that combined colorfully illustrated and detailed project instructions in both English and Spanish, a online chatroom with text, photo, video and audio capabilities, an interactive YouTube live show highlighting project steps and student work, and drop-in Zoom office hours with tutors. “Future Humans” offers a powerful model for an inclusive and engaging approach to asynchronous project-based learning.

Poetry Bonding

Author: Jean E. Fox Tree

Abstract: Field-specific sense of belonging (as opposed to general sense of belonging at a university) is especially important for persistence in STEM fields (Hansen et al., 2023). The colloquium series in the Cognitive Area of the Psychology Department affords one way of creating a sense of belonging for graduate students. Beyond hearing about new research and providing an opportunity for faculty and graduate students to learn about topics and methods in the field, the colloquium series provides professional development opportunities as well as bonding opportunities. I created a bonding activity centered on writing poetry. Faculty and graduate students wrote poems about themselves, their research, or each other. I implemented the activity during the first colloquium of the 2023–2024 academic year. The activity was successful. Details of the activity and thoughts on future implementations will be discussed.

Works cited:

- Hansen, M. J., Palakal, M. J., & White, L. J. (2023). The importance of STEM sense of belonging and academic hope in enhancing persistence for low-income, underrepresented STEM students. Journal for STEM Education Research, 1-26.

Learning to Teach Systematic Problem Solving and Creativity in the Chemical Sciences

Authors: Alex Ayzner, Anna Johnston

Abstract: One of the most important skills that a budding scientist needs to develop is problem solving. To solve important and complex problems, such a student must also learn to think creatively within a scientific domain. But the standard undergraduate science curriculum may be reasonably criticized for not teaching students to become systematic problem solvers. This issue may be amplified in the transfer-student population who come from a great variety of backgrounds with wildly varying degrees of problem-solving training. With the help of the National Science Foundation, I set out to fill some of these gaps by creating a new active-learning-based course that would explicitly aim to train undergraduate students in the chemical sciences to become systematic and creative problem solvers. Additionally, I aimed to help build a sense of community among science students, many of whom have been traditionally underrepresented in the sciences. I adapted and evolved a cognitive science foundation used for lower-division physics education to an upper-division chemistry setting and taught several iterations of this course, CHEM 139. The course tried to smoothly transition from learning to attack problems encountered in upper-division science classes to ill-structured, research-type problems that one encounters in scientific research. In this talk, I will discuss what worked in this education experiment, what failed, and where such a course may fit within the modern science curriculum as we try to prepare students for success beyond the university.

Queer Ecologies: Facilitating Student Exploration of Queer Scientific Lenses

Authors: Allison Payne, Aspen Ellis

Abstract: For hundreds of years, scientific discovery has been driven by heteronormative Western perspectives on what is “natural.” Scientific disciplines that ignore queer voices lose the insights of talented scientists and miss the opportunity to discover a world that is both more inclusive and more scientifically robust. We taught an undergraduate seminar series called “Queer Ecologies” in which students explored intersectional queer experiences in ecology and discussed how viewing the natural world through a queer lens has the capacity to alter mainstream scientific insights around sex, gender, and beyond. We designed this course as graduate students with the reflection that we wished something similar had been available to us when we were undergraduates. We intended the course to:

- Provide a sense of community for undergraduates, both among peers and by offering representation of early-career scientists with queer identities;
- Provide opportunities for graduate students and undergraduate students to connect on the topics of queer identities in the field of ecology;
- Explore topics around queerness in ecology and consider how open queer participation can change ecology.

We used reflective journaling prompts and “Persistence in the Sciences” questions to survey the students about how the class affected their sense of belonging and connection to scientific community. Overall, student reflections highlighted a strong sense of community and a motivation to continue in science. We present the reflections and survey results, share key takeaways, and offer a roadmap for others who seek to help students engage with STEM fields and career paths through a queer lens.

Transparent Mastery in the Physics 6 Series

Author: Amy Furniss

Abstract: A summary of a Physics 6 series course structure which utilizes mastery-based assessments and transparent alignment will be provided. The motivation, application and initial review of the course structure as applied to the large Physics 6A lecture course will be presented.

Active Learning in Social Welfare: Lessons on Community Mutual Aid Resources

Authors: Alycia Ellington, Brittney Jimenez

Abstract: Academic spaces and classrooms were formed around a notion of hierarchy, with educators being the dominant knowledge holders and producers. These rigid structures have been responsible for deciding who is knowledgeable and whose knowledge is considered valuable. How do we reimagine the classroom as a site of resistance to colonial hierarchical ideologies? Active learning has become a popular tool that allows opportunities for students to put into practice their classroom knowledge through facilitated activities designed around the interest of the students. As an educator, I reimagine the classroom as a non-hierarchical space where students co-teach and co-learn. In this space, they are not only learning material from myself, but are also teaching their peers and me through examples from their own lived experience. In my presentation, I will give you a snapshot of one of the lessons I facilitated as a Teaching Assistant in the course SOCY 141: Social Welfare during the Spring 2023 quarter under the mentorship of Dr. Rebecca London. In conjunction with two days of lectures on government assistance, this active learning lesson was centered on the concept of mutual aid that is created by and for the community. This lesson featured an icebreaker for student check-ins, an overview of the reading on undeserving and deserving poor, a video on an introduction to mutual aid, and a speed-dating type activity where students got the chance to be the educator and share their knowledge with their peers. This talk will conclude with a summary of my teaching evaluations for this quarter. Moreover, this talk aims to showcase the benefits of implementing active-learning components into higher education curricula for both educators and students.

Career-Oriented Approaches to Teaching in the Archaeological Sciences

Author: Jay S. Reti

Abstract: Transfer students who intend to pursue field-based disciplines are often met with disadvantages due to their short time on campus. Access to methodology courses, summer field schools, and other opportunities to form career-oriented networks (for post-graduation jobs, graduate school, or internships) can be limited for these students. Courses that focus on marketable skill development can fulfill multiple needs for all undergraduate students, including transfer students. In this presentation we focus on teaching Lithic Analysis, the study of stone tool technology, as an experiential and marketable skill and as a hands-on and field-based course. By teaching students how to make lithic implements and then how to analyze those implements, students become prepared for careers in cultural resource management, museum curation, and/or graduate education.

POSTERS

Technical Project Design

Author: Kristen Gillette

Abstract: This presentation examines how alternative approaches to project/assignment design can be utilized to enhance and/or expand potential student learning outcomes for projects that incorporate — and require — technical understanding, creative processes, and integrated knowledge/understanding. This presentation is especially useful for those teaching within the Arts, but could be applied to other areas of research and topic / subject-matter focus.

The outcomes of this alternative project integration resulted in several unexpected and unanticipated student outcomes, along with an unexpected variety of general in-class results/outputs.

Author: Marilia Kaisar

Abstract: How can we embed freedom and critical, creative thinking into our teaching and course design? How can we teach students to incorporate humanities theories into making, designing, and operating in the world? Active-learning pedagogies seek to transform learning from a passive listening, writing, and reading practice into an active involvement in sharing and engaging with ideas and experiences. The design of both in-class activities and assignments has the capacity to offer students the space and structure where they can engage with ideas through practice. In The New College Classroom, Cathay N. Davidson and Christina Katapolidis write: “Giving students freedom to be curious, to create and to lead requires planning and organizing activities for them to use that opportunity and autonomy productively” (30). In this presentation, I would like to discuss the potential of incorporating creative assignments and the critique structure even in theory-oriented classes. Creative assignment structures allow students to choose their own adventure as their final project, asking them to complete a creative project, write an essay, or both, without prioritizing writing over a creative exploration. Here, I will discuss two courses where media (films and podcasts) and more complicated theory texts were used as stimulants, asking the students later to either produce creative work or participate in a collaborative group project while engaging in a process of open critique: collectively sharing, reviewing, and revising. How can we think, theorize, participate, and engage while making? This talk attempts to restructure the space of art critique as a space for exchanging ideas and as an opportunity to experiment with thinking and making through theory. In this space, revising the work asks the student/maker to process feedback, offering them space to reiterate and evolve after the critique is over. How can we gather and create low-stakes experimental works together that evolve according to our collective conversations?

A Novel Project-Based Molecular Biology Experimentation and Design Lab Course

Author: Dianne Hendricks

Abstract: We describe the design and implementation of a novel, project-based molecular biology experimentation and design lab course that is focused on participatory design by students. The students complete a synthetic biology project involving “clonetegration,” or the one-step cloning and integration of a plasmid carrying a cloning module and integration module.

The key innovations of our course include:

(1) We require participatory design by students at all stages of the project. In addition to the benefit of promoting better learning outcomes, participatory design engages students of diverse backgrounds.

(2) We aim to make the course accessible and supportive to students of diverse backgrounds by creating a collaborative, low-stakes environment.

(3) We co-created course with undergraduate students in iGEM, including the project itself and also individual assignments, which provides the instructor with unique insight.

Recent studies have shown that project-based courses and participatory design experiences are particularly effective at engaging women and other students from underrepresented groups in engineering. In addition, a major benefit of participatory design is providing students with a real-world lab experience in a safe and supportive environment that will prepare students for success in capstone and other research opportunities.

We aimed to make this course accessible and supportive of students from diverse backgrounds. We provide a supportive, low-stakes environment for students to learn from their mistakes. As this lab series is often the first exposure students have to our department, it is especially important to make all students feel welcome and give them tools for future success.

In conclusion, we have found that a project-based molecular biology experimentation and design course that is focused on participatory design supports diverse students and helps them feel confident, prepared for research, and more connected to the BME field.

Designing a Project-Based Curriculum in Assistive Technology

Authors: Dianne Hendricks, Sage Brill

Abstract: We will describe a project where students design and build a 3D-printed prosthetic hand. We began with an independent study for one undergraduate. We plan to pilot the project in a first-year design course, and then launch a course on accessible design.
Our curriculum will introduce students to diversity, equity, and inclusion (DEI) in the context of socially responsible engineering. Furthermore, we aim to attract underrepresented students to engineering, as project-based courses and engineering activities with positive social impacts have been shown to support engagement and retention of underrepresented students in engineering.
We chose the prosthetic hand template from e-NABLE (enablingthefuture.org), which is a global online community that provides free instructions for 3D-printable upper limb prosthetics and also accepts requests to connect makers with people in need of assistive devices. Thus, e-NABLE aligns with our DEI goals and introduces students to socially responsible engineering. In addition, e-NABLE is a real-life example of something that students can do to have a positive impact on others.
The prosthetic hand project introduces students to the importance of:

1. DEI in the engineering design process: identifying needs, problems, and solutions for people of diverse abilities.
2. Participatory design in engineering: engaging users in design at every step of the process.
3. Advocacy and representation of underrepresented groups in engineering.

Our innovative curriculum bridges the gap between engineering and social responsibility, with the aim of fostering growth for engineers with a commitment to inclusivity and ethical design. With the skills learned in this course, engineers of varying backgrounds can advocate for affordability of prosthetics and other assistive technologies.
In conclusion, we describe a step-by-step, scalable project in assistive design. Our primary objectives are (1) to raise awareness about DEI issues in prosthetic accessibility and (2) introducing students to practical engineering skills through a project-based curriculum.

Quiz Generator: Collaboratively Creating Flexible and Easily Maintainable Multi-Platform Quizzes

Authors: Eriq Augustine, Lise Getoor

Abstract: Collaborative quiz and exam creation has always been a difficult problem in the academic community. In particular, maintaining consistent quiz versions across different sections, terms, and personnel is especially challenging. This problem has been exacerbated by the migration to online quizzes since the COVID-19 pandemic, and the move to hybrid in-person and remote learning structures. Tools like Canvas Quizzes work well for administering quizzes, but do not support collaborative editing, sharing quizzes, saving quizzes in external formats, or converting a quiz to paper.

To confront these challenges, we have developed a free, open-source toolkit, Quiz Generator (QuizGen). QuizGen allows instructors to create quizzes in a unified readable common layout and then quizzes can be instantiated in any number of formats automatically — quizzes can be generated in Canvas, HTML forms, LaTeX, PDFs, or Gradescope. The common and simple layout allows for quizzes to be collaboratively edited and shared via a variety of mediums such as a free source-control system (e.g., GitHub, SourceForge, Bitbucket, and GitLab), Google Docs, Microsoft Office 365, and even email. This ability to easily share and collaborate not only improves the experience within a course, but also allows for easier sharing between courses, versioning, maintenance, and building of question banks. The flexibility to switch from an online quiz to a paper quiz (and vice versa) without any additional changes allows instructors and TAs to focus on the content of the quiz and the experience of the students rather than the semantics of the quiz medium.

The QuizGen is currently being used by several courses in the CSE department with plans to expand to more courses and departments. The QuizGen tool and documentation is freely available at github.com/eriq-augustine/quizgen and a sample quiz featuring all supported question types is available at github.com/eriq-augustine/cse-cracks-course. Contact us for support or a demonstration.

Autograder: Scalable and Secure Automatic Assignment Grading

Authors: Eriq Augustine, Lise Getoor

Abstract: Grading code has been a long-running challenge in programming courses. In addition to the challenge of infinite potential solutions, running a student's code presents security risks, potential to crash machines and lose work, and difficulties with supporting multiple operating systems and software versions. Historically, code has been graded using custom scripts curated by instructors over many terms, or left up to TAs with varying levels of consistency term to term. Even with sophisticated grading scripts, there still exists the difficult "last mile" problem of actually getting code from students and getting timely feedback back to the students. There are few free and open-source options that are scalable, secure, and allow for instant feedback to students.

To address the problem of grading and providing feedback on programming assignments, we introduce the Autograder, a tool that allows instructors to create new or integrate existing grading infrastructure into a secure system that 1) accepts and tracks student submissions; 2) runs students' code in a secure, isolated, and customizable environment; 3) provides students feedback on their submissions; 4) saves and backs up submission history; and 5) uploads grades to a course management platform such as Canvas. Additionally, the autograder provides many tools to help instructors and TAs manage their course, such as: daily reports detailing scores of submitted assignments; viewing student submissions; downloading gradebooks; syncing assignments and users with Canvas; and seeing a student's submission history.

The Autograder is currently deployed for several courses in the CSE program. The Autograder is freely available at github.com/eriq-augustine/autograder-server, and a sample course using the Autograder is available at github.com/eriq-augustine/cse-cracks-course. Contact us about deploying the Autograder for your own course.

Statistical Literacy on Campus: Innovations and Future Directions for STAT 5

Authors: Marcela Alfaro Cordoba, Sho Kawano

Abstract: This presentation outlines the ongoing redesign of STAT 5, a General Education large course in statistical literacy at UCSC, undertaken to address significant challenges in student engagement and achievement. The course has historically struggled with high DFW (drop, fail, withdraw) rates. Our initiative, inspired by the success of Project REAL in Fall 2022, focuses on developing a standardized, interactive curriculum, emphasizing statistical literacy over computation.

A core aspect of our redesign is the departure from traditional textbooks in favor of custom-developed readings and case studies, aimed at fostering a more engaging, project-based learning environment for a large classroom. This approach is being collaboratively developed by the authors, with the support of Jenny Quynn from Baskin Engineering and the Teaching and Learning Center (TLC). The project plans to construct a comprehensive set of resources, including a redesigned syllabus, a quiz bank, dynamic class activities suitable for large lectures, and a Canvas page with ready-to-use instructional materials, all tested and refined for effectiveness.

The presentation will delve into the collaboration and ongoing development process, highlighting the contributions of the TLC and partnerships with campus resources like Baskin Engineering, and the library's Open Educational Resources program. We will showcase the redesign plan, the strategies implemented so far, the challenges faced, and the expected outcomes of our planned evaluations.

Historia Hip Hop: Designing UCSC's First Bilingual Online Course

Author: Lily Balloffet

Abstract: As part of a department-wide push to increase equity, accessibility, and inclusion in the undergraduate Latin American and Latino Studies curriculum, I designed UCSC's first ever bilingual online asynchronous course. The result, “Hip Hop History/Historia Hip Hop” is an exploration of key themes in Latin American History through the medium of hip hop. Students engage with the various “elements” of hip hop as a jumping off point for analyzing prevalent historical patterns. I have now been running the course for five iterations, and have honed my methods for building a sense of intellectual community and belonging in the context of a large, asynchronous, bilingual group of students. I hope to contribute a poster reflecting this pedagogical project and some of my key takeaways over the past five academic cycles in the realm of innovating pedagogy in order to teach for equity.

“Negotiating a Rainforest’s Ransom”— Role-playing Games in Active Learning and Holistic Assessment

Author: Stephanie Lain

Abstract: A common challenge for instructors is how to bring together disparate concepts introduced in a course and leave students at the end of the quarter with a tangible sense of having explored the material in depth. Over the past few years, I have been working to develop a game I created for a new course — Society and Sustainability in Latin America (SPAN 156L). SPAN 156L explores language and content related to environmental issues in Latin America. It looks at how Latin America is unique in the world with respect to biodiversity and how longstanding conflicts from the region’s colonial past have shaped the discourse around environmental stewardship. Special attention is paid to how indigenous communities, who have been disproportionately impacted by natural and man-made disasters, have emerged as leading voices in the fight for environmental protections. The final project is a Reacting to the Past (RTTP) role-playing game I developed called “Negotiating a Rainforest’s Ransom: Ecuador 2007–2013”. RTTP games follow the trajectory of a real past event, but, unlike a play, the games allow students to imbue the characters with their own dialogue and to exercise free will in decision making (within the confines of the game objectives). My aim in creating the game was to provide opportunities for students to: 1) recruit and exercise their Spanish language vocabulary and discourse strategies; and 2) discover how the discrete themes addressed in the course had the potential to overlap and produce a complex real-world problem.

In this presentation I will discuss elements of the game and how it went the first quarter that Society and Sustainability was taught (in Fall 2022). Specifically, I will address challenges to implementation as well as rewards. Additionally, I will comment on the role of the instructor as facilitator and co-collaborator during the gameplay process.

Critical Analysis of ChatGPT Product

Author: Dustin Gray

Abstract: In my course, “Humans and Machines, A History,” students explore how technology can enable, inhibit, and control their users in a variety of contexts. Much of what is discussed in a course of this nature revolves around themes of autonomy and control. Though humans tend to use technological innovation to advance and extend their own “natural” abilities, we were often confronted with cases where certain technologies seemed to have their own degree of autonomy and control over us.

It is no secret that we are currently experiencing an explosive period of growth in the field of artificial intelligence. When teaching this course in the winter quarter of 2023, I first encountered a final essay submitted by a student that I strongly believed to be written by a large language model (LLM), likely ChatGPT. At the time, the university did not have an official policy on how to address this issue, nor was there any officially sanctioned AI detection software that could be used to specifically identify cases of its use. To avoid this concern when teaching in the fall quarter, I decided to offer students the options of either oral presentation, or to take an exam as means of final assessment.

Though this certainly helped to avoid the problem, I still wanted to explore with my students how the use of LLMs might enable or inhibit their “natural” human abilities. As one of our final in-class exercises, I printed out a draft of a short essay written by ChatGPT on the theory of an author that we had read and were all familiar with. I handed it out and asked the students to read it and offer their own critical analysis. The presentation I would like to offer will expand on their analysis of the use of AI for academic purposes.

The Acquisition of Tense and Aspect by Instructed Adult Learners of Italian

Author: Gabriella Notarianni Burk, PhD

Abstract: The semantic notions of tense and aspect have been extensively investigated in the domain of second language acquisition. After more than two decades of inquiry, conflicting views and a plethora of hypotheses and theoretical explanations have been proposed to account for the complex phenomenon of tense and aspect acquisition by second language learners.

This study investigates L2 acquisition of tense-aspect meanings, more specifically the effect of lexical aspect and grounding on the distribution of perfective and imperfective markers in the speech of instructed L2 learners of Italian. The acquisition of the Italian temporal and aspectual system poses challenges for English-speaking learners of Italian as a foreign language. As Rastelli and Vernice (2013) observed, first- (L1) and second-language (L2) discrepancies in semantic representations and lexical conceptualizations may hinder the acquisition process. The rich and elaborate morphological system of Romance languages is formally complex. The mastery of the past tense verbal morphology (e.g., the Spanish preterito and imperfect, the French passé composé/simple and imparfait, the Italian passato prossimo/remoto and imperfetto) requires L2 adult learners to acquire the functional complexity of aspect and the multiple semantic meanings of the morphological forms.

This investigation on past tense marking in L2 Italian is framed within two hypotheses: the Aspect Hypothesis and the Discourse Hypothesis. The rationale for selecting these two theoretical constructs rests on the assumption that the two categories of tense and aspect may interact in the encoding of temporal expressive devices and narrative functions.

The influence of lexical aspect and grounding on a narrative elicitation task was examined in a sample of 44 participants, selected according to three levels of proficiency (beginning, intermediate, and advanced). Results suggest that grounding overrides aspect in the selection of past-tense markers in the oral narrative task.

Centering Student Voices Through Flipped Learning

Author: Annette Marines

Abstract: Flipped learning (FL), in which students complete a series of active learning exercises, creates opportunities for students to practice and develop skills needed to conduct original research using both primary and/or secondary source materials. While this instance of FL, like other examples, makes use of asynchronous online pre-work and in-class discussion and activities — students complete the lessons before the class and spend in-class time tackling difficult concepts — an unexpected outcome resulted from reading the pre-work responses submitted by students. Their "answers" to the guiding questions — questions framed to be open-ended yet focused and non-judgemental and to invigorate the topic under study (Traver) — in the pre-work provided a window into the ways students make sense of and conduct their research. When taking in the "dataset of answers" as a whole, this enabled new insights to be drawn and, from these, new ideas to be put into practice in the in-class discussions that have centered students' voices and experiences as well as their concerns and questions. This library service has been in place for over a year and continues to be refined as new insights are drawn. The current iteration of FL has enabled me to level up library support for students in Arts and Humanities courses for which instructors request library support for class research assignments.

Works cited:

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Developing Equity-Minded Tutors — Adapting Zaretta Hammond's "Ready for Rigor" Framework for Undergraduate Tutors

Authors: Sharon Castro, Lexie Tapke

Abstract: It is known that training improves the effectiveness of tutoring, however, the curriculum for national and international tutor training certification programs lacks an equity lens. To address this, Learning Support Services has integrated Zaretta Hammond's "Ready for Rigor" and "Warm Demander" frameworks into the training and education of all LSS tutors. The Ready for Rigor Framework developed by Zaretta Hammond couples neuroscience and cultural understanding. It teaches teachers "how to operationalize pedagogical principles into culturally responsive teaching practices." The framework has four components — Awareness, Learning Partnerships, Information Processing, and Learning Environment. All of these components work together to create the socioemotional and cognitive conditions to support the development of independent learners. The Warm Demander is a tutor skillset for knowing when to offer emotional comfort and care, and when to not allow students to slip into learned helplessness. It combines having an awareness to bring the student into their Zone of Proximal Development while in a state of relaxed alertness. In the last year, we have adapted, translated, and curated Hammond's framework to fit the unique needs of undergraduate tutors serving undergraduate students. We will present how we designed in-class activities to teach an adaptation of the framework and will discuss assessments we created (like the self-observation assignment, learning portfolios, and tutor session observations) to assess if tutors are learning and applying the framework. There are still questions to be answered, like how does a framework meant for teachers who meet with students daily translate to tutors who meet with students once a week, or once in a quarter? We hope to encourage tutoring centers (or those who supervise tutors) to lean into teaching tutors pedagogy (if it works for teachers, why wouldn't it work for tutoring?) to build more equitable learning spaces and encourage tutor autonomy.

Assessment-Driven Professional Development: Using Rubrics to Create Role Plays for Mentors

Authors: Susanna Honig, Thelma Perez

Abstract: The Academic Excellence (ACE) Program aims to increase the diversity of students earning undergraduate degrees in Science, Technology, Engineering, and Mathematics (STEM) at UC Santa Cruz, and ACE has been serving this mission for over 35 years by offering supplemental active-learning sessions and peer-mentoring sessions for lower-division STEM gateway courses. ACE hires 20 to 30 peer mentors every quarter to help facilitate active-learning experiences and provide role modeling and mentorship for their peers, and mentors attend a training and development workshop to engage in the theory and practice of active-learning facilitation. During the 2022–2023 academic year, ACE developed rubrics to gauge proficiency in four important aspects of equitable teaching: facilitation, time management, structure, and inclusivity. These rubrics were then shared with ACE peer mentors and professional staff during the 2023 training and development workshop and used as the foundation of a role-play activity that required peer mentors to act out scenarios that illustrated different levels of proficiency across the four rubric categories. By engaging student and professional staff in an assessment-driven active learning activity, mentors were able to translate theoretical language from a rubric into relatable and meaningful examples of inclusive and structured facilitation. Future directions for assessment-driven professional development at ACE include utilizing the same rubric to perform observations of peer-mentoring sessions and providing feedback on mentoring proficiency.

Environmental Science (ESCI 191) Capstone Course: Building Campus Resilience to Climate Change

Author: Peter Weiss

Abstract: When Michael Drake announced this was an “all hands on deck” moment in the fight against climate change and the University’s commitment to leading by example, I was compelled to incorporate actionable climate science into my teaching. Actionable climate science is science that guides climate adaptation plans such as the ones recently released by the State of California in 2022, spurring UCSC’s latest commitment to get to “fossil-free” by 2030. Realizing that the tools necessary to bring these aspirations to fruition have not yet been developed, Environmental Science students have an opportunity to contribute to building a resilient society. Thus, the idea for a senior capstone seminar was born, to teach students how to devise climate action projects on the scale of the UCSC campus, using the campus as a “living laboratory”. These projects were written in the form of a grant proposal for the final project, and a Letter of Intent for the midterm assignment, following the guidelines written in a Request for Proposals from UCOP. In the pedagogy of climate change as a social and scientific phenomenon, there has been an over-emphasis on the gloomy prospect of humans in the face of dire predictions, whereas this course emphasizes innovative solutions using the state’s and the university’s own impressive array of solutions already implemented as a guide. With so many adaptations needed to address the full impact of climate change, incorporating actionable climate change curricula into many types of courses is possible, and is urgent given the climate projections. Examples will be discussed for active learning activities that can provide a unique perspective on how to mitigate, and adapt to, climate change.

CURE Initiative at UCSC

Author: Guido Bordignon

Abstract: The Curricular Undergraduate Research Experiences (CURE) Initiative at UC Santa Cruz is a new approach to engage undergraduates in full-fledged research projects. The aim is to provide students intensive lab training, critical thinking, collaboration, and meaningful, hands-on research experience. The pedagogical design of the CURE labs reduces achievement gaps, boosts Science Identity for Underrepresented Minority students, and broadly expands opportunities for undergraduate success. The Toxic RNA, Tumor Suppressor Protein, Chemical Biology/Biocatalysis, and Synthetic Gene Regulation lab experiences were each intensive with 20+ hours/week working in the lab and a strong emphasis on teamwork to improve social-emotional competencies. During the lab, Critical Thinking was the core pedagogical framework for skill building. Students were expected to exercise and demonstrate reasoning in their investigation and data analysis. Students were first asked to develop and state a hypothesis for their experiment, and to justify a robust biological rationale that would support their hypothesis. In a second phase, students were required to identify a control group and experimental group, and complete their experimental design using an appropriate statistical analysis for their data prior to collection. Lastly, after running their experiments, they were expected to describe observations with respect to their hypothesis. We ran assessments at the beginning and end of the projects. Preliminary data from our Experimental Design Pre-Assessment demonstrates dramatic change in the capability of students to approach a scientific question and apply a research framework from participation in the CURE program. Available data on race and gender show promising results for closing equity gaps. Future data on CURE student participants will be collected as they continue their academic career at the university in an effort to track and explore longer-term patterns of performance and student success.

Following Our ABC's: Developing a New and Improved General Chemistry Series

Authors: Geri Kerstiens, Alegra Eroy-Reveles

Abstract: Members of the Chemistry and Biochemistry Department at UCSC have been working for the past few years to develop and implement a new general chemistry series. The three-quarter series includes active learning experiences, a new coordination with general chemistry lab courses, a new focus on major chemistry themes inspired by learning objectives from the Center for Curriculum Redesign, and integration with the ACE (academic excellence) program to help our TAs with implementing active learning in discussion sections. We are currently evaluating impacts of the course on student persistence, learning gains around our three major chemistry themes, and equity achievement gaps. In the future, we are planning to examine student performance in future chemistry courses to see how our course may have positively impacted their longitudinal chemistry learning.

Seeing Through Two Eyes: Combining Indigenous and Western Ways of Knowing in Astronomy

Author: Madelyn Broome

Abstract: “Etuaptmumk or Two-Eyed Seeing is learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of Western knowledges and ways of knowing, and to use both these eyes for the benefit of all.” (Bartlett, Marshall, and Marshall 2012, 336).

This framework is increasingly being employed by educators involved with educating and researching learning and belonging of Native-American students in the classroom. How exactly to bring the Indigenous way of knowing into the science classroom, though, is not always easy — especially when indigenous ways of knowing are often thought of as antiquated, primitive, prototypical, belonging to the past, or at odds with modern Western science. We have explored one method of engaging these Ways in astronomy through star stories. Star stories are a historical and current-day ways of storing observations and astronomical knowledge in the form of tales or legends. Our goal was to strengthen student science identity as a belonging intervention and leverage the fact that our brains are “wired for stories” as retention and recall tool.

We present anecdotal results and lessons learned from the incorporation of star stories in a general-education Astronomy 1 classroom at UCSC and through a high-school aimed outreach program at Lick Observatory called Native Star Stories Night.

Decoding Science: A Course Blueprint for Critical Analysis of Peer-Reviewed and Popular Science Articles

Authors: Jess Sevetson, Zurine De Miguel

Abstract: The rapid proliferation of scientific news and pseudoscientific claims online necessitates that media consumers not only access but critically evaluate the reliability of information. This pedagogical initiative, integrated into a 15-week Biological Psychology course at CSU Monterey Bay, aimed to enhance students' proficiency in interpreting peer-reviewed articles alongside their lay-press counterparts.

At the semester's outset, an in-class workshop provided guidance through the anatomy of a peer-reviewed article, aiding students in identifying key elements and distilling salient information. This foundational lesson served to equip them with the analytical tools necessary for subsequent independent evaluations. Homework questions were crafted to reinforce these skills, and all articles were provided on Canvas to facilitate equitable access.

Students were assigned pairs of articles — scientific and popular press — engaging with the material through a dual lens of scholarly critique and public consumption. Assessment of comprehension was accomplished through a consistent set of five questions for each article pair to encourage deep analysis and thoughtful comparison. This exercise culminated in two projects that tasked students with deconstructing a neuro-myth or pop-science trend, fostering both research acumen and scientific literacy. Reflective questions were also used to track metacognition and engagement throughout the semester.

Preliminary observations and feedback suggest this approach has bolstered students' confidence in navigating scientific discourse. The iterative nature of the discussions, adapting to more effective formats over time, highlights the importance of flexible teaching strategies in response to classroom dynamics.

Instructors considering this approach are advised to incorporate a structured introduction to scholarly articles and to adopt an adaptable, small-to-large group discussion framework to cultivate a supportive learning environment. Notably, allowing student choice in news article selection positively impacted engagement. This project serves as a model for pedagogical innovation that not only teaches content but also empowers students with lifelong learning skills critical for navigating an ever-expanding digital information landscape.

Putting Students in the Driver's Seat of Rapid Ecological Research Projects

Authors: Abraham Borker, Ingrid Parker

Abstract: Practicing scientific skills has powerful links to STEM identity, motivation, and achievement. Experiential learning modules often let students practice, perform, and reflect with elements of the scientific method, but rarely are students given authentic freedom to direct their own research starting at ideation. When students are able to direct their own research, it often comes with a high-stakes container such as independent research or quarter-long immersions. This creates a conundrum, where the first time students are given agency to the entirety of the scientific process, the stakes and anxiety can prevent healthy boundary-pushing and experimentation in research. As a remedy, we have designed a “Rapid Research Assignment” that can be done in as little as a single three-hour lab period. The assignment is open-ended, and inquiry-based, allowing students a low-stakes opportunity to experiment with the entire scientific process in an experiential learning framework. Students work in small groups to find an ecological pattern, pose a hypothesis, design a study, collect and analyze data, and communicate findings back to peers. This module scales across experience levels from first-year non-majors through graduate students. Here we share materials for implementation, a facilitator guide, and examples of student posters. We will discuss how, when implemented well, the assignment provides opportunities for scientific skill performance and recognition. Structured reflection and iteration of the assignment furthers the experiential learning cycle. Evaluations (SETS) give some insight into how students perceive the assignment, appreciating agency in designing their own research, and some anxiety around such a loosely defined assignment. Finally, we present multiple transferable design principles based on a decade of experience with the assignment that can scale to other course designs and experiential learning modules.

Training the Next Generation of Scholars: An Innovative Approach to Teaching Research Methods

Authors: Elise Duffau, Vera Umansky, Rebecca Covarrubias

Abstract: Research methods courses are opportunities to welcome students to the campus and the major, especially for transfer students transitioning to campus for the first time. They offer a foundation for empowering students in the research process, including applications of research for social justice. Through a participatory action research (PAR) approach, which centers those who are most impacted by the work (Fine, 2018), students become the main drivers of the research and steps toward action (Silva et al., 2020). In Fall 2023, a teaching team of 12 TAs, 1 lead TA, and 1 faculty instructor launched a dynamic course curriculum focused on student-led PAR projects. The faculty and lead TA met weekly to co-design support elements such as weekly section curriculum, scaffolded participatory assignments, and online discussion boards. The lead TA additionally supported the TAs by clarifying structural course elements and course goals, and co-developing plans to navigate common course challenges. TAs implemented the structured sections and guided students through the process of conducting PAR. Students in each of the 12 sections collaborated and converged on a single research question centered on students' experiences and student success at their institution. At the end of the 10-week quarter, each section submitted a brief abstract and product (infographic, research brief) to communicate their findings. Their projects were translated to a course site to engage the broader campus community. To create a flexible and dynamic learning environment, the teaching team met weekly to adjust the course based on TA and student feedback. TAs leveraged their research experience by incorporating their knowledge into section materials and support resources. These meetings aided in refining the course structure in real time, and enabled the teaching team to adapt teaching strategies in response to student needs and strengths for learning.

They Were Learning During the Exam: Reflections on Using Two-Stage Collaborative Exams

Author: Katie Monsen

Abstract: In Fall 2019 I started using collaborative exams in two upper-division Environmental Studies classes. Agroecology and Sustainable Food Systems is a natural-science-focused class of 60 students, exploring the biotic and abiotic components of land-based agroecosystems, including photosynthesis, soil, water, and nutrients. Freshwater and Wetland Ecology is also natural-science-focused, with 50 students learning about the physical and biological aspects of groundwater, streams, rivers, lakes, and reservoirs. Both courses also explore human-environment interactions.

I have used midterms and a final exam as key assessments in these classes, and on hearing about collaborative exams during a TLC-sponsored event, I decided to try using them. The current version I use is a two-part exam. At the start of the exam period, I hand out the entire exam, consisting of a) one page of 15 to 20 matching questions focused on vocabulary terms (35–50% of the exam grade), and b) several pages of short- to medium-answer questions (50–65% of the grade). I give the students a quiet work period of approximately 30 minutes, then I collect the matching portion and the students may work together for the last 35 minutes to complete or adjust their answers to the rest of the questions. Each student submits their own exam.

Students have overall been satisfied with these exams. Anecdotally, they have reported that they study hard for the exams because they don't want to let other students down, while at the same time some of the stress around the exam has been reduced. I have given more challenging questions than I have for individual exams, and have observed students debating the answers. One student said, "We are learning during the exam!"

In using these exams in future classes, I am interested in obtaining written student feedback on the exams and other modifications to the format.

Borrowing from the Pandemic to Make the Best of Unlucky Circumstances

Authors: Jean E. Fox Tree, Elise Duffau, Lauren E. Knox

Abstract: This Winter 2024, we have been teaching a 120-person upper-division class at 8 AM. Most of the sections are in the evening, including two that end at 7:45 PM. We opted to teach the sections remotely. This choice has yielded a number of benefits. The in-class lectures afford students the opportunity to participate in a traditional campus class where students can readily see and hear classmates' responses to lecture content. They can participate in class demonstrations and they can work on in-class activities in pairs or small groups. The remote sections afford students the opportunity to work in breakout room discussions and use a range of spoken and written communication to engage with learning material. In addition, remote sections afford students the opportunity to continue learning from their homes in the evening. With less time spent commuting, students can spend more time preparing for the next day's lecture and studying the material. Leveraging both in-person and remote modalities encourages student participation given the challenging class and section times. The course design may be particularly advantageous for winter quarter classes where students are more likely to get sick and to be contagious. Remote sections allowed students to engage in some course learning without risking the health of their fellow students. Section engagement and performance was higher with this structure than in prior iterations of the course. Plusses and minuses of this course design will be discussed.

Identity Exploration and Intersectionality: Building Foundations for Students Academic and Personal Growth at UCSC

Author: Dr. Angela Birts

Abstract: I invite professors, instructors, graduate students, and staff at UC Santa Cruz to participate in a session aimed at guiding first-year students through an exploration of identity, belonging, and intersectionality. This session is designed to lay the groundwork for both academic and personal development, fostering lively discussions and practical activities.

This session aims to tackle the challenge of understanding the complexities of social identities and their intersections, which can pose significant barriers as students navigate questions of self-discovery during their transition to adulthood. Drawing from key texts such as Beverly Daniel Tatum's “The Complexity of Identity: Who Am I?” and Bobbi Harro's “The Cycle of Socialization,” participants will collaboratively explore strategies to encourage students to critically reflect on their identities. We'll also examine how identities are perceived across different social contexts, particularly within the classroom and university settings, shedding light on barriers to inclusion.

Through discussions and interactive exercises like the Social Identity Wheel, participants will gain deeper insights into the multifaceted aspects of their own identities, fostering empathy for their students' experiences.

This session is dedicated to nurturing a culture of inclusivity and understanding within the UCSC community. Professors, instructors, graduate students, and staff are encouraged to join this important discussion and contribute to creating an environment where all students feel valued and supported.

Online Entrepreneurship Education

Author: Nada Miljkovic

Abstract: This paper examines the evolving landscape of online entrepreneurship education, positioning it as an amalgam of art practice and new media platform. Central to this discussion is UCSC's GetVirtual program, a hybrid entity combining a course, a nonprofit startup, and a Coursera offering. The paper argues that in the digital age, entrepreneurship education has transcended traditional methodologies, leveraging digital tools to create immersive and engaging learning experiences. This shift marks a departure from physical classrooms, allowing for a more inclusive, diverse, and accessible educational environment. GetVirtual is highlighted as a pioneering model in this new educational paradigm. It links UCSC students with virtual business mentors, blending digital skills acquisition with practical entrepreneurial experience. This initiative not only provides students with real-world work experience but also supports local businesses and startups, fostering a spirit of community involvement and practical learning.

The paper also explores the integration of GetVirtual into the MOOC environment, exemplifying the potential of asynchronous learning platforms to extend the reach and impact of entrepreneurial education. The use of multimedia teaching materials in these courses highlights the innovative and artistic approach to entrepreneurship education.

Furthermore, the paper draws parallels between entrepreneurship educators and artists. It posits that the art of teaching entrepreneurship involves crafting narratives and engaging learning experiences that resonate with students, fostering a mindset conducive to innovation and problem-solving. This approach aligns with the World Economic Forum's Skills Future report, which emphasizes the need for adaptable, future-ready skills in the evolving job market.

In conclusion, the paper asserts that online entrepreneurship education, exemplified by programs like GetVirtual, is effectively bridging the skills gap. By blending artistry with technological innovation, these programs are preparing students for the challenges and opportunities of the modern business landscape, thus shaping the future of entrepreneurship education.

DIGITAL PRESENTATIONS

Moderno: Re-Visions of Nature

Author: Saul Villegas of MODERNO

Abstract: Unveil the narrative potential of Photoshop as a digital storytelling tool, using prompts to reshape images. In the dynamic image presentation, witness the transformative influence of generative AI, pushing the boundaries of photo treatment and seamlessly connecting conscious storytelling with the subconscious. This synergy elevates visual narratives and serves as a unique avenue for practicing research inquiry. By employing Photoshop's capabilities to infuse ethnographic philosophy into images, it becomes a dynamic medium for conveying cultural ethos. Exploration of the pictorial medium highlights the fusion of digital tools, exploring their role in shaping narratives and embodying the essence of ethnographic practices as research inquiry.

Library Support for Experiential Learning: Equity and Inclusion Through Active Engagement

Authors: Sheila García Mazari, Sam Regal, Wynn Tranfield

Abstract: UCSC's commitment to experiential learning provides a model through which to create increasingly equitable teaching practices. In today's society, information has become progressively complex, and requires an active engagement with information literacy content that both grounds students in critical analysis, while also affirming their roles in the scholarly community. With the rapidly changing information landscape, it's more important than ever that students have a strong foundational understanding of information literacy concepts.

Unique approaches to experiential learning address the needs of UCSC's various departments. UCSC Library's Special Collections and Archives houses primary-source materials representing university history, the evolution of regional and national social movements, printing traditions, and modern and contemporary avant-garde artworks. In facilitating hands-on engagement with rare and distinctive materials, SC&A encourages active engagement with material culture. Additionally, divisional liaisons work closely with faculty to provide materials aligned with faculty and student research interests, and empower members of the UCSC student community toward deep intellectual engagement and experimentation. Support moves beyond the classroom to meet the community where they are, whether it be in the classroom, lab, or out in the field.

Three UCSC librarians will present their vision for increasing experiential learning opportunities that allow students to not only research and analyze, but share findings with their community, creating content made by students for students. This approach aims to create equitable entry points for students, including providing asynchronous and online instruction, as well as robust in-person support.

Essays are Improved with Supportive Feedback and with Personalized Feedback

Authors: Yasmin Chowdhury, Jean E. Fox Tree

Abstract: The feedback students receive on academic assignments can make a huge impact on how they learn and engage with the material, which can improve their performance on subsequent assignments. Technology affords multiple feedback methods, such as audiovisual feedback or texted feedback. In two experiments we tested how students used feedback of two different types: (1) supportive versus critical feedback, and (2) personalized versus non-personalized feedback. In both experiments, we compared feedback provided by video and by text. Students wrote a short three-paragraph essay on a topic and then were randomly given either supportive or critical feedback (Experiment 1), or personalized or non-personalized feedback (Experiment 2). Students then wrote a second essay. All feedback was given on Zoom either via video or using the text-chatting feature. Essays were graded on a ten-point scale with improvement assessed as the difference between the two scores. Students who received supportive video feedback improved more on their second essay than students who received critical video feedback. They also improved more than students who received texted feedback. Students who received personalized feedback improved more on their second essay than students who received non-personalized feedback; in this experiment, the personalization mattered more than the format (video or text). In both experiments, students who received video feedback felt closer to their instructor. Students who received supportive feedback and students who received personalized feedback felt more positively about the feedback. When giving feedback to students online, it may be beneficial to word the feedback in a way that helps students better use the feedback. We will discuss the specific language and how it was implemented in our online settings.