This report details the innovative ways instructors are working hard to engage students, using technology as a means to improve the results. They are trying something new, and it's paying off. Their students have responded—by getting involved, making connections, creating something original, even sharing their learning online for anyone to see.

The Innovators Among Us series aims to facilitate sharing best practices and celebrate that willingness to try something new.

This latest report, When Technology Brings Learning to Life, is, in itself, an example of “trying something new” through a partnership with UW Information Technology supported by the Center for Teaching and Learning and UW Libraries.

Each of the stories presented here were released over the past year on the Innovators Among Us website. Now they are gathered in a printable report and paired with another innovation: downloadable guides with best practices culled from each teaching technique. These are practical tips that can be replicated and applied to other classrooms and in different disciplines.

UW instructors are continually experimenting to improve their teaching methods and student learning outcomes. Countless people, from teaching consultants to learning technologists to graduate assistants and so many more, join in that tireless dedication to student learning—that is one of the strengths of a great university.

We look forward to telling more stories of those classroom experimenters who are finding new ways to engage students and measure the outcomes in the search for meaningful impact.

Thank you to the innovative instructors engaged in this work and to all of those committed to improving teaching and learning at the UW.
In spring 2015 Ursula Valdez, a UW Bothell lecturer in Interdisciplinary Arts & Sciences, used readily available technology and social media tools to bring Peru and its people right into her Bothell classroom.

She teamed up with a colleague in Peru to teach the same class in two countries at the same time, creating a dynamic virtual learning community that encouraged students from vastly different backgrounds to work and learn together.

“Working with students who are thousands of miles away is not impossible anymore,” says Valdez, who is encouraging colleagues to consider launching similar classes. “We can be in China, in Egypt, in Peru or in a classroom in Seattle. It doesn’t matter. We can use all the offerings of the modern world to help us make global connections.”

Valdez’s class, From the Andes to the Cascades along the Pacific Coast: Environmental issues in Peru and the Pacific Northwest, was taught as an advanced seminar for 10 Bothell students.

Valdez designed the class as a collaborative international learning experience, partnering with Dr. Armando Valdes-Velasquez, who taught a parallel class for his 20 students at Universidad Peruana Cayetano Heredia in the capital city of Lima. Both classes were taught in English.

“Collaborating with the Peruvian students online was an amazing opportunity that challenged my communication skills and significantly helped to prepare me for working with colleagues internationally,” says Kramer Canup, a UW Bothell student.

“This was an experience that made me realize how small I am in this world,” says fellow student Kanwal Yousuf, “yet there is so much one person can do to make a difference.”

To make the class a success, Valdez knew she needed students in her classroom and in Peru to engage in deep discussions on environmental issues that affect both their countries. And they had to interact and collaborate with one another to find potential solutions.

Use a combination of multiple social media and communication tools: Valdez, who received her Ph.D. in biology from UW, and her Peruvian colleague Valdes-Velasquez relied on social media tools that are ubiquitous around the globe to bring their classes together.

They used Skype to create a single virtual classroom, allowing the students in both countries to make voice calls, chat and message, and also to conduct live video conferences over the internet. These sessions brought the parallel classes together as one, even as they were being held concurrently 5,000 miles apart.

To encourage and enrich further interactions among students outside the classroom, Valdez asked students to use social media tools such as Facebook and WhatsApp, a free instant messaging app for smartphones, which allowed students to talk to one another inside and outside the classroom.

There were communication challenges, for sure, but the efforts paid off in huge ways, says Peruvian co-lecturer Valdes-Velasquez. “Designing and developing a course that took into account two distinct realities and two languages was a huge challenge,” he says. “And one of the most rewarding initiatives I have been involved in.”
Globally networked learning is possible

The seeds for Valdez’s class were planted a year ago, when she attended a UW Bothell Global Initiatives seminar and heard about the Collaborative Online International Learning (COIL) Fellows program.

With COIL, Valdez saw an opportunity. “I kept thinking about how I could bring some of these experiences from my native Peru to my students in Bothell. But I was also thinking about how I could bring the rich history and biodiversity of the Northwest to Peruvian students,” she says. “I wanted to create an international and intercultural learning community that broke boundaries.”

Valdez received a COIL fellowship to develop a collaborative international teaching and learning experience that focused on biodiversity, climate change and other important issues that face the Northwest and Peru. With assistance from Valdes-Velasquez, she spent several months designing her course.

Find parallels to build a course around shared common themes: “It was not difficult to find parallels between the two countries,” Valdez says. “Armando and I wanted students from each country to relate to each other’s problems.”

In addition to having the students teach each other through videos and online discussions, each class moved beyond research to take action for environmental change.

They developed a plan such as writing op-eds or circulating a petition, then shared the experiences and results with their international classmates.

“Watching my students explore the similarities between the past and current issues in Washington and Peru, engage in heated discussions with their US counterparts, and work jointly to come up with great presentations and great work has led me to believe that the skills to work internationally should be an intrinsic part of our career programs,” Valdes-Velasquez says. “It creates new and enriching opportunities for students and, most importantly, helps create a new kind of professional capable of generating global initiatives and answers to today’s problems.”

WHAT STUDENTS SAID

“I learned why collaborating and researching with other people from other parts of the world is so important.

You begin to see things you didn’t see through the eyes of someone who may live in a very different society compared to yours. You get to compare issues that happen around your area to issues that are happening around the world.

This was an experience that made me realize how small I am in this world, yet there is so much one person can do to make a difference.”

Kanwal Yousuf
UW Bothell student

“It was interesting to talk and share ideas that could lead to discussions to solve problems in conservation that were presented throughout the course.

We were able to do concrete things to solve problems such as writing letters to various authorities, whether the head of state, ministry of environment or fishery, and letters to the editor in magazines.

It was rewarding to have new ideas for problem solving, as well as cultural exchange among students.”

Romina Najarro
Universidad Peruana Cayetano Heredia student
DONALD CHI PREFERS TO SHOW RATHER THAN TELL IN THE SCHOOL OF DENTISTRY

First-year dental students learn big lessons thanks to strong storytelling videos

Four years ago, UW School of Dentistry associate professor Donald Chi traveled to a remote Alaska Native community in the Yukon-Kusokswim Delta region to find out what was rotting young *keggutet*, the Yup’ik word for teeth.

What Chi learned in the field perfectly illustrates why he has replaced traditional paper case studies with videos in first-year public dental health classes—it is often better to *show* rather than *tell* students how complex dental health issues may someday challenge their professional lives, and the lives of their patients.

“When I was a dental student here at the UW, we had lectures and paper case studies that we discussed in small groups,” says Chi, who teaches in the Department of Oral Health Sciences. “We studied a different case each week, but they didn’t feel tangible or real to me.”

**Video case studies illustrate complexities of real-world health disparities**

The videos elicited a more visceral and more humane response from students, and also increased student engagement and learning, he says.

The videos are used in the Introduction to Dental Public Health Sciences course, which familiarizes first-year dental students with public health concepts such as barriers to dental care, behavioral and social determinants of oral health, and the development of multi-level solutions to reduce oral health disparities. These are areas in which Chi has experienced issues firsthand in Alaska and in other communities as a researcher and dentist.

Case studies play a central role in introducing students to real-life scenarios. They may show, for example, high numbers of cavities among children in an area where there’s no fluoridated water but plenty of sugary drinks.

Throughout his Alaska research, Chi met these children and their families, and saw how shocked and surprised parents were after realizing their children had been consuming 16 times the maximum amount of added sugars recommended for children.

“These case studies put dental health care in perspective. They allow students to follow a scenario, discuss barriers to health and potential solutions with their peers. But I thought we could do it better with video,” Chi says.

Chi returned to teach at the UW in 2010, when pedagogical approaches also were making a strong case for video in some circumstances. He wanted to see if videos could make the case study approach an even more powerful learning experience, and he started with a modest goal of three videos to test the waters.

**Start with a plan and an achievable target:** Chi launched the video pilot project shortly after his arrival. One video tells the story of a teenager of American Indian descent with mouth sores caused by tobacco products; another follows a non-English speaking pregnant woman frustrated by dental forms she can’t understand; a third focuses on a Medicaid-enrolled preschooler with a non-English speaking mom.

All three are still in use today, with six others now part of the dental library. Chi said there are plans to make more videos, including one that discusses dental problems faced by the homeless population.
Student data showed videos resulted in better learning than paper case studies

Gather evidence throughout the process: “I’m big on evidence-based teaching,” says Chi, who co-authored a study comparing video vs. paper cases. The data revealed that dental students who received a video case for study reported better affective, cognitive and overall learning outcomes than students who received a paper case. “We found significant statistical differences. Across all measures, the videos were much better at improving student outcomes.”

Students who watched the videos reported a higher understanding of public health problems and how these issues might affect their own careers as dentists. Compared with students who studied from paper cases, the video students also had more empathy toward vulnerable individuals and a greater appreciation of how health disparities impacted real people, Chi says.

Through visual storytelling, the individuals and their problems become more real to students—some of whom have never even had a dental cavity. The videos, he says, lead to deeper, more empathetic thinking toward people dealing with health disparities. “When we made the videos, I didn’t realize at first how powerful they were and how much they affected the thinking of so many students,” says Chi. “Many were outraged by the situations they saw in the videos. They were affected in a very profound way.”

Special acknowledgments: The original video idea stemmed from a collaboration among Chi and Drs. Jacqueline Pickrell, lecturer in Oral Health Sciences at the UW, and Christine Riedy, now an instructor at the Harvard School of Dental Medicine. As psychologists, they were involved in dental research at the UW School of Dentistry when the videos were first proposed. Funding for the pilot videos came from three main sources: The UW Department of Oral Health Sciences, the UW Regional Initiatives in Dental Education (RIDE) Program, and the UW School of Dentistry Fund for Sustaining Excellence.

STUDENT TESTIMONIAL: HOW VIDEO PUTS A FACE ON REAL DENTAL HEALTH CARE ISSUES

“Before I started dental school, I knew that it would not be an easy task, yet I was still surprised and overwhelmed by the sheer amount of information that we needed to learn. In my effort to stay afloat, I resorted to memorizing hard facts and statistical numbers presented in PowerPoint slides, hoping that this would be sufficient to help me pass the constant stream of quizzes and exams.

“It was not until I took Dr. Donald Chi’s Dental Public Health Sciences class that I realized I was missing the true purpose of learning for a health care provider. In that class, Dr. Chi utilized video case studies to illustrate scenarios of patients encountering various issues when they try to access dental care. For me, this approach ‘puts a face on the problem,’ which reminded me that we are learning to be care providers; we not only need to know the facts, but ultimately need to use the knowledge in a way to positively impact patients’ health outcomes.

“The video case studies were also important in stimulating an active learning process. We analyzed the scenarios in the videos to pinpoint the challenges that the patients faced. Then through group discussions, we came up with potential solutions and researched scientific literatures to evaluate the feasibility of each solution. Through this process, we were actively engaged in our learning, which helped us become critical thinkers and independent learners.”

CHRISTOPHER SHYUE
School of Dentistry
Class of 2018
Researchers uncover persistent gender performance gaps in their classes, but suggest techniques to improve equity

Ben Wiggins, a faculty coordinator for instruction and lecturer in biology, knew many students in his introductory biology classes faced challenges that reached beyond the material being taught.

Something else, something quite powerful, was at play in the background, affecting the performance of female students. Work by Sarah Eddy, Sara Brownell and Mary Pat Wenderoth (Eddy et al. 2014)1, his colleagues in the Biology Education Research Group at the UW, had revealed an achievement gap that favors males as top performers, a phenomenon that could affect student self-confidence—particularly of females—thus influencing their persistence in their discipline.

The researchers observed this gender achievement gap, in addition to a participation gap, even in classes where males were outnumbered by females three-to-two. Although their research focused on introductory biology classes, the researchers believe the dynamic may be at play in other science, technology, engineering and mathematics (STEM) classes and throughout the University as well.

Wiggins joined colleagues Dan Grunspan, a doctoral student in anthropology performing graduate work on social aspects of learning, and Eddy, then a post-doctoral student heavily involved in gender equity issues in the classroom, to further understand what was happening. Their research revealed another bias in who students perceive as knowledgeable in the class.

The research: How Wiggins and colleagues reached their conclusions

To conduct social network analysis, Wiggins and colleagues began by asking students to list who in the class they predict will be a particularly strong student. “Just because a student knows someone doesn’t mean they’re willing to say ‘I think they know the material,’” notes Wiggins. No inequality was evident when the question was asked at the beginning of the quarter, but as the students answered the same question after each of four exams throughout the term, more males than females were listed as strong students—even in a course where females significantly outnumbered males.

Analysis of the data revealed that males were much more likely to nominate other males, while women were equally nominating males and females who were perceived to receive high grades and often speak up in class. “Females seem to nominate equitably based on who you would expect [from actual performance], whereas males over-nominate other males,” says Grunspan.

This work has recently been published in PLOS ONE, and the larger team includes former Biology Education Postdoctoral Researcher Sara Brownell, UW Biology Principal Lecturer Alison Crowe and UW Anthropology Associate Professor Steven Goodreau2.

What instructors can do to minimize the gender gap

Despite the complexities of a classroom environment, the researchers say their data highlight broad issues that can largely be addressed through small tweaks in teaching methods.

Random calling helps address the common problem of implicit bias: Research on teaching has shown that gender biases commonly creep in to how instructors run their classes. “As an instructor, it’s likely that I don’t call on people in a gender-equitable way, even if I’m thinking about it, even if I have a lot of experience,” says Wiggins. “If you want to make classes more gender equitable, you have to take your own biases out of it.”

Therefore, Wiggins regularly employs a method known as random call to improve equity in class participation. It is a method long used in teaching, and the work of Eddy, Brownell and Wenderoth (2014) confirmed that random calling rather than choosing students or asking

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for volunteers can also equalize the environment of the college classroom. "Where everybody is equally likely to be called on, everyone is more active. Students can't avoid being called on by staying in the back," Wiggins says.

Involving more students beyond those who are naturally more inclined to be "outspoken"—a measure the researchers determined by asking instructors to rank students they recalled as speaking up most in class—can potentially influence the perceptions of other students about who is doing well in the class, one element affecting self-confidence. "But more importantly, it randomizes who is doing the talking," notes Wiggins. "It may help to alleviate this prestige gap that we see."

**Random calling can offer more equitable opportunities for positive reinforcement:**
Women in particular can benefit from seeing more women speak up with the right answer or successfully handle being wrong—with no adverse effects on males in the classroom. As students transition into a career, beginning with an introductory biology class, women are particularly vulnerable to threats to their self-confidence, which is closely linked to persistence in STEM and is known to be heavily influenced by social interactions such as classroom participation.

Getting an answer right or wrong in an introductory biology class may seem like a small thing to affect a student's persistence in a chosen field, but, "It's the day-to-day interactions that matter," explains Eddy. "The minute someone defers to you, you feel like you're an expert."

**Moving students from a “fixed mindset” about intelligence to a “growth mindset” may help:** Persistence and confidence are also closely linked to what students believe about their ability to grow their intellectual capacity and learn from being wrong. Noted psychologist and Stanford researcher Carol Dweck has shown that simple interventions, such as asking people to reflect and write about their values and motivations, can change people's mindset, and "rewire" the brain to a growth mindset. "One hypothesis is that perhaps more females are coming in with a fixed mindset while more males are coming in with a growth mindset," says Grunspan. Moving forward, the UW researchers plan to test the effects of interventions on introductory biology classes.

**Connecting the classroom environment to the outside world**
Digging deeper into the research revealed consistent gender gaps in both student perception and achievement, even when controlling for student grades coming into the class. "By the end of your college career, you may have seen this pattern happen 20 or 30 times, and those same people you see in all your classes may very easily be doing hiring or firing later," says Wiggins.

As Wiggins, Grunspan and Eddy realized they were seeing evidence of invisible but powerful forces affecting their students, they began to understand how persistent negative stereotypes can be. "We tend to think our classrooms are distinct from society, but the processes from our larger society are being brought into the classroom. Unless we can actively disrupt them, it will continue," says Eddy.

Eddy joins Wiggins and Grunspan in viewing classroom data as an important tool to interrupt the negative processes they observed. "Professors typically have the ability to look back at numbers and performance in a class. Start prying a little deeper and really assess what's going on in each classroom," advises Grunspan. If the data suggest these common problems are affecting the performance of your students, consider ways you can make space in your classroom for equitable opportunities and inclusion. "As instructors, that's where we have leverage," says Wiggins. "We want to make sure we run the class in a way that engages everyone, and this is just one example of changing our teaching to serve diverse students."

References:

BETSY EVANS BRINGS ‘REAL WORLD’ LANGUAGE TO THE CLASSROOM

Betsy Evans, associate professor in the Department of Linguistics, uses a number of technologies in her classroom to help students see and share the real world of language—deepening their understanding of complex linguistic theory.

These technologies include Canvas, UW’s learning management system, and clickers, an audience response system that allows an entire class to respond to questions displayed on a screen—with students clicking their replies with remote devices. Multimedia presentations, including video and audio recordings, help her explain subtle concepts to her students, such as listening for slight variations in language use across different cultural or societal groups, or how speakers shift when speaking to different audiences.

This strategic approach to using technology has paid off in big ways, allowing her students to get more out of her courses, inside and outside the classroom. Canvas also has allowed Evans to collaborate more effectively with her teaching assistants (TAs).

“It’s enabled me to not use classroom time for testing and to engage students with course content outside of the classroom,” Evans says. “But I think the best effect is that it helps students relate the course content to the ‘real world’ by seeing and sharing real occurrences of linguistic phenomena.”

Canvas supports online homework to save time and deepen student learning

Because a key element of her course content concerns regional patterns and dialects of the United States, the maps, videos and recordings Evans uploads to Canvas are all key learning aids. She and her TAs use Canvas to manage homework assignments, peer reviews, discussion boards, testing and grading, as well as an online evaluation system. Evans also shifted homework assignments online with multiple choice, pull-down menus or open-ended questions. Students saw the connections between online material and in-class lectures and discussions, and they reported in course evaluations that the multi-pronged approach improved their comprehension of the subject.

For low-stakes homework assignments or quizzes on Canvas, Evans allows students to work together over the course of a week. She finds the ability to easily upload and share multimedia files and links particularly useful for creating and updating online homework quizzes.

“For example, one assignment presents students with voice samples of different pronunciations that they play and then answer questions about what they’ve heard,” says Evans. She is able to set a time limit for completing the assignment and then Canvas grades it automatically once the closing date arrives.

In another assignment, her students watch two videos of President Obama and are asked to think about his use of language in the different situations. “So instead of only reading and writing about sociolinguistic phenomena, they can see or listen to speakers and use their knowledge to arrive at a better understanding of how it works,” she says.

Self-paced online practice benefits all students—especially English language learners

When students work at their own pace to complete a homework assignment, they are able to play recordings as many times as needed. “We get a significant number of people for whom English is not their first language, so allowing them to do those activities on their own time is really helpful for them, partly because they haven’t been exposed to a lot of American English accents,” Evans says. “I think they feel like they really learn a lot even if it takes them longer.”

Flexible online assignments help TAs learn best-practice evaluations

Canvas helps Evans and her TAs automatically grade assignments and quickly evaluate which questions work better than others, making it easy to throw out a question that didn’t work and return points to all students. Collaborating through Canvas also helps Evans guide her TAs as they learn more about teaching while sharing the workload.

“Last quarter, I said to my TAs, ‘The Chapter 10 assignment didn’t work very well, so can you brainstorm some ideas about how we might make that better?’” says Evans. The TAs analyzed why the questions weren’t effective, developed a new assignment, and then Evans worked with them to review and revise it before it was implemented.
Creating online tests with the Canvas quiz tool frees up class time

“What’s really changed for me in using Canvas with this class is the testing,” Evans says about how she now balances class time. Using the Canvas quiz tool enables Evans to spend less of her class time on testing and more on lectures and discussions. With the tool, she can develop online timed tests with questions that randomly mix to make collaboration difficult among students.

Evans learned how to use the tool while participating in the Teaching with Technology Fellows program, a 2013-2015 pilot project led by the Center for Teaching and Learning and UW-IT to help faculty redesign courses to incorporate technology in ways that put learning first.

“I take advantage of multimedia and videos with homework assignments, but with online tests I don’t want to have to worry about some failure with a video or other problems. So since some of our content is about regional dialects and patterns of linguistics, I use maps and other static images to ask questions for tests,” says Evans.

Clickers help reward in-class participation

While Evans manages an active discussion board through Canvas to share news items and media clips, she chose not to assign participation points for online discussions. Instead she rewards in-class clicker participation.

“I get class discussions going through using clickers with the audience response system,” she says. “I’ll ask three to six questions per class period, and students get points for responding to a question with clickers. It’s low stakes—they don’t have to have a correct answer—but it allows me to see if a big percentage of people aren’t getting something right, and we need to go over it again.”

Click to see tips from the related Innovators Guide

Evans always begins class with a clicker question on a topic from the day before to refresh material. She also sometimes starts discussions by asking opinion questions and having students talk with their neighbors before answering with a clicker. “It gives them practice for the test because the questions that I use in class for the clickers are the same type they can expect to see on the test,” she says. “It also breaks up the lecture. I really enjoy doing them.”

Evans also received positive feedback from class evaluations that the clickers were working. Students said the clickers “incentivized me to show up and pay attention,” with one student commenting, “I also liked the clickers because the questions helped to test us on our knowledge of what we had just gone over in the lecture.”

Through creative use of Canvas and clickers, Evans is able to get her students to think about course material—from current events to real Washington state accents—in multiple ways and apply that knowledge to the real world.

FROM COMEDY TO LECTURES: SHARE VIDEO ON CANVAS

TA Brent Woo uses video sketches shared through Canvas to guide discussions on language complexity.

“Our class, Linguistics 233, was focused on studying how people use language in society — how they use different styles to communicate, how dialects and accents form, and how we study these changing features of language. There are a lot of opportunities to use timely and relevant video clips.

“For an example, we used a sketch from Saturday Night Live (SNL) called The Girlfriend Voice, where Andy Samberg, Bill Hader and Seth Rogen are hanging out and talking ‘like bros.’ Then they pick up their phones to talk to their respective girlfriends, each adopting a cutesy affected voice.

“This is a perfect demonstration of a huge topic in sociolinguistics — Accommodation Theory — where people adapt their speech style to fit whom they’re talking to. It was easy to teach this concept through the video since students saw, even with SNL’s exaggeration, that it’s a real thing that people do.”
KIM DAVENPORT FINDS THE MEANING BEHIND THE MUSIC

Online tool helps students get creative with final class presentations

Last fall, UW Tacoma Lecturer Kim Davenport turned to FOLD, a new web-based open publishing platform, to help her students construct multimedia presentations that allow them to discover their creative voice. FOLD, as Davenport quickly discovered, boosted the learning of the students in her humanities classes, encouraging them to express their ideas about music in multiple ways.

“It brought out a lot of creativity in my students. And it made them better presenters,” says Davenport, a lecturer in Interdisciplinary Arts & Sciences who first asked students to use FOLD for their final presentations last autumn quarter.

“Many of the presentations are very touching, from a student who is contending with life after military service to someone who explored his world of sound by making a potato clarinet,” says Davenport, who also was pleased by the high quality of content students produced, including the original musical pieces they performed for classmates.

Technology can offer students new options to apply theories and demonstrate understanding

Students are now required to use FOLD to produce their final assignment in Davenport’s course, Listening Outside the Box: Concert Music in the 21st Century. Before, Davenport asked students to write a two-page paper.

Writing about music is no easy task, says Davenport, even for seasoned musicians. FOLD makes it easier for students—many who have no music experience at all—to design, create, document and perform a new musical work as part of their final class presentation. With FOLD, they can attach videos, song snippets, photos and other multimedia to their words.

“I have been using FOLD for three quarters now, and it has really reinvigorated the final assignment,” Davenport says.

Studying—and emulating—an artist can boost your own creativity

Davenport’s class is centered on the musical philosophies of John Cage, considered one of the most influential composers of the 20th century. Cage pioneered the idea of “indeterminacy” in music—where any part of a musical composition is “indeterminate” if its performance is not precisely specified in the notation, allowing the performer to play at random or within certain guidelines.

Student Paul Kang uses FOLD to describe which theories and artistic works by John Cage inspired him to make a clarinet out of a potato. He includes photos and descriptions of his own creative process alongside video and reference websites that showcase Cage’s work. See the full FOLD at tiny.cc/potatoclarinet.

Photo courtesy of Kim Davenport.
This approach also typically features non-standard use of musical instruments or even everyday objects, such as what is seen in the musical Stomp and by the Blue Man Group live musical act. Students learn about Cage, the meaning and philosophy of music, and, finally, are asked to create and perform a new musical work in homage to Cage.

Davenport says Cage’s ideas about music are particularly important—and accessible—for students who are looking at music critically for the first time. His unique ideas and creative approaches, which often push the boundaries of what is traditionally considered music, encourage students to expand their own views about music.

Following in Cage’s footsteps, many of Davenport’s students push the boundaries in their presentations, creating original video to play their scores and using a wide range of media to support their ideas and inspiration.

**Students learn how creative inspiration can come from anywhere, from the kitchen to Snapchat**

FOLD, developed at the MIT Media Lab’s Center for Civic Media in 2015, lets users link media “cards” to the text of their stories. These cards can include content in just about any digital form, from unique and fresh multimedia content created by the users to videos, photos, maps, tweets, audio and other links that already exist on the internet.

For an example, Davenport sends her students to look at L’instrument de la Terre, created by student Paul Kang, who made a potato clarinet for his final class assignment. Kang talks about his inspiration in his FOLD presentation, which is peppered with video, photos and music.

“I chose to make a potato clarinet to show that you can make music with anything if you have the passion and the dedication like John Cage,” writes Kang, who carved a potato and used clarinet parts to make his instrument.

Another student found his inspiration from social media. “My motivation to do this piece came from my constant Snapchat use,” writes Ariel Advincula. “I realized I posted a lot of snippets of my life on my Snapchat and if I skipped, stopped and replayed the footage in sporadic patterns, I found that even the simplest of sounds can become music.”

Students have the option of keeping their projects online, Davenport says, something she encourages so others can enjoy and learn from their work.

“I’m always trying to find ways to make music more engaging for students. Some of my students have no musical skills, and I want to empower them to find their own voices by creating music and sharing those experiences with others.”

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**WHAT STUDENTS SAID**

Excerpts from students’ Musical Statements in their final projects for Davenport’s course, Listening Outside the Box: Concert Music in the 21st Century.

“I’ll be the first one to admit, I was among those that had set qualifications for my definition of music. That it should sound nice, that it should flow in a pleasant way. I never questioned these assumptions until I was introduced to the works of John Cage.”

**Kelly J. Scott**

*Music: A Platform of Non-Definitive Expression*

“I decided to make a musical piece using non-traditional instruments. I’ve decided to use anything I have that has to do with football. Jerseys, footballs, memorabilia, and sideline talk and/or commentary from games.”

**Leigha Cortado**

*In the Game*

“Although I like to focus on realism in charcoal, and John Cage was very abstract with the use of unconventional techniques, I thought it was appropriate to express my love for art since he loved it too. I also wanted to make something he could make as well... by introducing a sense of music or sound with the silence surrounding the noise a pencil makes against paper.”

**Alexx Elder**

*Draw Your Heart Out - John Cage*
JODY EARLY ENGAGES ONLINE STUDENTS WITH THEIR COMMUNITIES

Blending eLearning with service learning projects creates community online and offline

UW Bothell associate professor Jody Early faced a difficult task—challenging her busy nursing and health studies students with a more meaningful learning experience by combining an online global women's health class with community-based service learning.

Early was determined to find a way for her ‘place-bound’ and non-traditional students—often juggling demanding work schedules and family commitments—to reap the benefits of service learning by partnering with local and international organizations.

So she set out to build community online and offline by carefully bringing together seemingly disparate pedagogical approaches in her Women's Global Health and Human Rights online class.

**Technology creates opportunities for access and connection**

“What draws me to technology is the issue of access,” says Early, associate professor of Nursing and Health Studies. “Offering online and hybrid courses increases pathways for students who, for a variety of reasons, may not be able to earn their degrees otherwise. eLearning, in all of its forms, also enhances flexibility and choice for students who seek a more blended educational experience.

“However, there is a stigma attached to online learning,” Early says. “Some feel it cannot live up to the face-to-face experience in terms of quality and outcomes, despite an impressive volume of credible research that shows it can. Does teaching in a virtual environment mean, as faculty, that we have to sacrifice experiential or community-based strategies? Does it have to be formulaic and watered down? Absolutely not.”

Early structured her class to address these issues by seeking to eliminate the sense of loneliness and disconnect often felt by online students. She talked with each student often, and gave them many opportunities to work with peers and community partners.

**What to consider when including service learning in online courses**

To further enhance their learning experience with real-world situations, students were required to complete a community-based project as part of their final grade. But Early gave them plenty of options.

Most of her students had no experience in community-based learning and research courses at a university level, and 90 percent worked full-time, so this flexibility was extremely important, says Early, who relied on three key strategies to build community online and offline:

**Explain the relevance of community-based learning to online courses:** Adding community-based learning to an online course can motivate students and reduce feelings of isolation.

Students can have more “hands on” opportunities to apply what they are learning, and to learn from community members and peers.

“I truly believe it is critical for students in any discipline to have opportunities for authentic, problem-
based learning,” Early says. “Including community-based projects in my course allowed the students to transfer what they were
learning and discussing online into ‘real time’—to strategize, to problem-solve and to deepen their understanding of all of the
factors that impact women’s health and gender equity around the world.”

**Address the importance of cultural humility:** Spend time discussing and reflecting on one’s position relative to the service
learning context; explain what reciprocity means in the context of service learning, and don't assume that students have been
exposed to these topics prior to your class. Addressing the importance of cultural humility early on as students prepare to work
with community organizations is essential.

**Provide students with options:** Allow students to choose from a variety of projects and offer options that can be completed
individually as well as with partners or in groups. This helps to mitigate barriers for students whose work, health and/or life
situations might otherwise prevent them from participating in service learning.

Her students partnered with Seattle Against Slavery, Northwest Film Forum, Refugee Women’s Alliance, A Call to Men and
National Women’s Health Network.

They participated in challenging projects that pushed them outside of
their academic discipline and comfort zone, and engaged in a broad
array of activities, from leading canvassing events against human labor
trafficking to curating a digital art exhibit about women’s global issues,
even organizing and leading a film screening and panel discussion on
International Women’s Day with lauded film director Lynn Shelton. Much
of the organizing took place online.

Early’s efforts to build community online and offline paid off, her students
say.

“Students who are very busy working and studying love online classes,
but there was a beautiful twist in Dr. Jody Early’s class,” student Leah
Ta’an says. “We were still able to connect with the community and fellow
students as part of our project.”

The class compelled nursing student Varinder Heera to get more involved
in issues affecting girls and women.

“As I completed the final project, I became more determined to support girls in their quest for
an education and being in charge of their own lives,” says Heera, who became a volunteer with
an organization based in India that supports women’s health and rights. “I have realized raising
awareness and taking action to stop gender inequity has a major impact on everyone’s health.”

A survey of her class showed that 94 percent of Early’s students ‘strongly agreed’ or ‘agreed’ they felt a sense of community and
social connection to their instructor and peers; 84 percent ‘strongly agreed’ or ‘agreed’ they felt motivated throughout the course
to explore learning materials, readings and media.
DESIGNING AN INTERNATIONAL COURSE COLLABORATION

Top tips from Ursula Valdez, lecturer in Interdisciplinary Arts & Sciences at UW Bothell.

1. Find a committed teaching partner and connect with UW resources for support

Support is available for UW faculty and staff who want to pursue teaching globally. The Collaborative Online International Learning (COIL) Fellows program can guide you on how to successfully carry out globally networked learning, from finding a faculty partner to gathering institutional support and negotiating course content with your teaching partner. Valdez teamed up with Dr. Armando Valdes-Velasquez, at Universidad Peruana Cayetano Heredia in Lima, Peru. While having her own global connections was certainly helpful to Valdez—who grew up and studied in Peru and continues to teach there—it is not a prerequisite.

2. Look for engaging topics that cut across borders

Finding areas of common interest to students in both countries is one of the most important components of any co-taught international class, Valdez says. Working together, Valdez and her teaching partner settled on four major topics for discussion that had parallels in both countries: biodiversity and iconic species of the Pacific Northwest and Peru; use of forest resources and the impact of human activities on habitat loss, conservation and the economy; mountain ecology and climate change; and fisheries and conservation. Both classes were taught in English.

3. Collaboration leads to higher engagement

Interaction and collaboration with Peruvian students was highly motivating for her class, Valdez says. It led to higher engagement with class materials and better learning outcomes. “You begin to see things you didn't see through the eyes of someone who may live in a very different society compared to yours,” says Kanwal Yousuf, of UW Bothell. “You get to compare issues that happen around your area to issues that are happening around the world. I learned a lot about why our ecosystem is so important, but most importantly I learned why collaborating and researching with other people from other parts of the world is so important.”

“Anyone can research, then compare and contrast bioregions of the world. But as these students learned about their local bioregions and how it impacted people they now were getting to know, students started gathering and posting additional information to benefit each other, not just to get a better grade. That is motivated learning at its best.”

- Greg Tuke, COIL Facilitator
Social media is your friend

The two faculty used multiple tools to help their students communicate across the globe. Valdez settled on Skype for streaming during classes, both for its large number of communication features and because it is readily accessible to Peruvians. Similar to using Canvas as a platform for discussions, Valdez decided to create a private Facebook group to allow students to share information outside the classroom.

Valdez also created a blog for students to share their ideas, and during field trips to Mount Rainier and other Cascade Mountains destinations, she encouraged them to make short videos that could be shared on their blog and Facebook group. This diverse array of communication tools made it easier for students to exchange ideas inside and outside the classroom.

“Yes, there were language barriers, technical barriers, but students felt empowered,” says Valdez. “We used everything we had at our disposal to help them learn together.”

Get students to be active—and take action:

Valdez brought her students out to the field, arranging outdoor workshops and field trips with a conservation biologist. But to help them understand that research for research’s sake is not enough, Valdez and Valdes-Velasquez helped them brainstorm opportunities to take action that would encourage real change.

At UW Bothell, students assembled a display table at the center of campus with information on protecting water quality in Puget Sound, and asked fellow students to sign a petition. The Peruvian students took similar actions back in Lima. “We were able to do concrete things to solve problems such as writing letters to various authorities, whether the head of state, ministry of environment or fishery, and letters to the editor in magazines,” Peruvian student Romina Najarro says. “It was rewarding to have new ideas for problem solving, as well as cultural exchange among students.”

Read more about how Ursula Valdez created an environmental studies course that was paired with a parallel class in Peru in Classrooms without borders, part of the Innovators Among Us series at uw.edu/trends/innovators.

APPLY TO BE A UW COIL FELLOW

UW faculty from all three campuses are encouraged to apply for the UW Collaborative Online International Learning (COIL) Fellows. Successful applicants will receive $2,000 in funding and individualized support to implement an international collaboration course. The eleven 2015-2016 Fellows are working on projects with partner universities in Japan, the Philippines, Germany, Mozambique, Costa Rica, India, Greece, France and Chile. Read more at tiny.cc/UWCOIL.
THE INNOVATORS GUIDE

PRODUCING CASE STUDY VIDEOS

Top tips from Donald Chi, associate professor in the School of Dentistry, on developing a strategy to shift from printed to video case studies for your courses.

1 Aim for quality over quantity

Chi recommends starting small, and focusing on producing only one or two videos at first. Students are accustomed to technology, and savvy about video. They know if something is poorly made when they see it. Chi and colleagues narrowed their focus and chose three dental health topics that could be illustrated through short, well-made videos.

2 Assemble a team and access UW support

Chi suggests involving people with expertise in producing videos and not being afraid to ask for help. UW Video provides services to the entire University community; faculty can also tap hourly videographers or Communication graduate students who are adept at visual storytelling and need a project. Chi says volunteer actors, film editors and videographers often need the practice and are happy to participate in this type of project. He recruited his sister, who had finished studying film at the UW, to direct and produce the videos. They worked together with a team of psychologists to craft the story and dialogue. Tapping such video expertise, from writing to filming to acquiring talent (actors), is more likely to produce positive results, with videos that will engage students.

3 Prepare a case for funding and start with a pilot

To support the costs involved in producing high-quality video, Chi sought funding from multiple sources to support his project. He put together a business plan based on three pilot videos and articulated a strong case for visual storytelling as a pedagogical tool. As evidence, he cited the Commission on Dental Accreditation, which encourages the use of technology such as video to enhance the educational experience of dental students while improving the learning environment.

4 Keep it short

Students don’t need one-hour videos. A typical video in the dental school is about 10 minutes long. That’s plenty of time for a detailed narrative that won’t overwhelm.

5 Remember that video isn’t a substitute for face-to-face teaching

Video does not stand alone. In problem-based learning using case studies, video is another tool for learning. It is most effective when paired with group discussions led by a facilitator.

COMPARING VIDEO VS. PAPER CASE STUDIES

Chi’s research revealed that dental students who received a video case for study reported better affective, cognitive and overall learning outcomes than students who received a paper case. “We found significant statistical differences,” he said. “Across all measures, the videos were much better at improving student outcomes.”

Read more about how Donald Chi navigated the shift to video in Showing rather than telling at UW’s School of Dentistry, part of the Innovators Among Us series at uw.edu/trends/innovators.
Top tips from Ben Wiggins, faculty coordinator for instruction and lecturer in Biology, on best practices to incorporate random calling for a more inclusive and equitable classroom experience.

1 **Introducing random calling to your classroom**

   Explain that the goal of random calling is to create a safer space for students to speak in class. “Where everybody is equally likely to be called on, everyone is more active,” says Wiggins. “But more importantly, it really randomizes who is doing the talking”—and who the class hears from.

2 **Create ground rules and sharing expectations**

   Inform students about how the process will work, and why you are using it. Explain options for how they can privately opt-out, for how long, and how they can get back on the call list.

3 **Decide how you will randomize student names**

   Don’t rely on yourself to randomly choose a name; instead, develop a system. Wiggins says it can be as simple as using two dice and a numbered list, or printing a randomized list that you check off in class.

4 **Lessen anxiety**

   “For a small percentage of students, the heightened anxiety may go beyond helpful into something that deters their learning,” says Wiggins. Always provide an option for students to voluntarily remove (and also re-add) themselves to the list. Wiggins suggests having students email the professor to do so.

5 **Value wrong answers**

   While “passing” on a question should always be an option, instructors who can create a courageous atmosphere find that this happens relatively rarely when the environment is optimized. The first time a randomly called student answers a question incorrectly is vital to setting a tone of discovery rather than accuracy. “Did you convince the student, and the rest of the class, that being wrong is a useful part of the process?” queries Wiggins. Help students learn to navigate and support their arguments. “If you do that, you’ll feel the class come around with you and they’ll be more engaged on more levels.”

6 **Remind students of the benefits**

   Whether it’s practicing public speaking and persuasive skills or making mental models transparent, connect the dots for students about the ways this learning method benefits them. “Their initial discomfort is often balanced out by the benefits,” Wiggins says. “Keep it relevant for students, if only through your own comments about process throughout class.”

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Read more about research on gender gaps in the classroom in **What is your class telling you?** part of the Innovators Among Us series at [uw.edu/trends/innovators](http://uw.edu/trends/innovators).
MAXIMIZING CANVAS AS A LEARNING TOOL

Tops tips from Betsy Evans, associate professor in the Department of Linguistics.

1 Maximize Canvas’ ability to integrate with multimedia and other technologies

Evans and her TAs use Canvas to manage homework assignments, peer reviews, discussion boards, testing and grading, as well as the online evaluation system. Evans also shifted homework assignments online, incorporating multiple choice, pull-down menus or open-ended questions. Online assignments can be automatically graded by Canvas.

2 Create and give online tests in Canvas, freeing up class time

This approach allows more effective use of class time for discussion while also providing more opportunity for instructors to evaluate how well test questions are working and make improvements.

3 Self-paced online practice benefits all students—especially English language learners

Evans switched to homework assignments that students have a week to complete, allowing them more flexibility to work at their own pace. For videos, students can pause and re-watch as many times as needed, helping to even the playing field for English language learners.

4 Instructors and TAs can collaborate on grading and lesson planning through Canvas

The flexibility of the Canvas platform allows TAs to develop lesson plans and try new quiz questions. Then Evans and her TAs can review data and evaluate how effective questions were for students. Multiple graders can even leave questions for each other and see the progress of others through Canvas.

Read more about how Betsy Evans uses technology in her classroom in Bringing the ‘real world’ of language to the classroom, part of the Innovators Among Us series at uw.edu/trends/innovators.

ADDITIONAL RESOURCES

Find more tips and advice about integrating Canvas and technology in your classroom at:
> Center for Teaching & Learning: washington.edu/teaching

> IT Connect: itconnect.uw.edu/learn/tools/canvas/
  • Easily publish course materials
  • Simplify and speed course management tasks
  • Grade assignments in half the time with SpeedGrader
  • Communicate and collaborate with students
INCORPORATING A NEW LEARNING TOOL FOR FINAL PROJECTS

Top tips from Kim Davenport, lecturer in Interdisciplinary Arts & Sciences, UW Tacoma.

1. If you’re going to use a new classroom technology, try it out first, see if it fits

Technologies come and go and that’s true for classroom use, Davenport says, so be open to new tools that can help you meet your teaching and learning goals. Davenport learned about FOLD when she used it to make a submission of her classroom work for a music award. As she tried it, she saw its potential to help students in her own classroom. However, as easy as it is to use, she says faculty should definitely try out any new classroom technology first before asking students to work with it.

WHAT IS FOLD?

FOLD is an open publishing platform developed at the MIT Media Lab’s Center for Civic Media in 2015 that lets users link media “cards” to the text of their stories for nonlinear storytelling. These cards can include content in just about any digital form, from unique and fresh multimedia content created by the users to existing videos, photos, maps, tweets, audio, etc. Davenport recommends it because her experience over three quarters has been largely positive—students have reacted well to it and have used it in creative ways to support and present their work.

2. Help students understand how to use the classroom technology and how it fits into their learning and creative process

Davenport spends time with students explaining how they will be using the publishing platform. FOLD helps students put different ideas together and to build on them to present their own creative ideas. “I don’t have to spend too much time telling them how to use it. Yet, it is important to make sure that students understand that this is just one tool for a very specific assignment.”

FOLD can help them tell the story of their final product but the creative work comes from them. “I still expect them to participate in the classroom and engage in discussion with other students in multiple ways,” Davenport says.

3. Make it a requirement for classroom consistency

At first, Davenport did not require her students to all use FOLD, but consistency in a classroom is important, she says. Now, students know they will be using FOLD to create and present their final project—worth 30 percent of their grade.

Read more about how Kim Davenport integrated FOLD in her classroom in Finding the meaning behind the music, part of the Innovators Among Us series at uw.edu/trends/innovators.
PAIRING SERVICE LEARNING WITH ONLINE CLASSES

Top tips from Jody Early, associate professor in Nursing & Health Studies at UW Bothell.

1. **Use community-based strategies to enrich online courses**

   Adding community-based learning to an online course can motivate students and reduce feelings of isolation. Students can have more “hands on” opportunities to apply what they are learning, such as helping organize a community event or getting involved with a non-profit, and to learn from community members and peers.

2. **Begin with a “module zero”**

   The first online session should help students who have never taken online classes to get comfortable with the basics. Early describes this best practice as “a starting point on the home page, to help my students familiarize themselves with the class, me, the syllabus, quizzes, expectations and what they’re about to embark on.”

3. **Plan ahead, keep it small and plan for contingencies**

   Give yourself three to four months’ lead time to plan this type of course, which works best with 30 students or fewer. Work your network to find partner organizations that can benefit from student service.

4. **Provide students with options**

   Allow students to choose from a variety of projects with options that can be completed individually, with a partner or in groups. This helps students design a schedule that works for them and can mitigate barriers for students whose work, health and/or life situations might otherwise prevent them from participating.

5. **Ensure good communication**

   Regular communication with students and community partners is vital to ensure there is reciprocity and to work through unexpected situations. Early builds in mid-quarter progress reports and schedules student conferences as needed. Keep open lines of communication with community partners as well, and schedule check-in phone calls or meetings regularly.

6. **Consider Community of Inquiry (COI) dimensions when designing a class**

   Community of Inquiry highlights three elements that are critical to successful online learning environments: cognitive presence, social presence and teaching presence. Learn more about COI at tiny.cc/COI.

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Read more about how Jody Early manages online classes such as Women’s Global Health and Human Rights in Engaging online students with their communities, part of the Innovators Among Us series at uw.edu/trends/innovators.
CONTINUING THE CONVERSATION

The goal of the Provost's Leading Change in Public Higher Education report series is to broaden and connect conversations on the UW's three campuses, share best practices and provide common reference points to inform our plans for the future. We welcome your participation, feedback and suggestions at edtrends@uw.edu.

UW RESOURCES

The Center for Teaching and Learning

The Center for Teaching and Learning offers workshops and Faculty and Professional Learning Communities (FPLCs), as well as extensive resources on teaching with technology, active learning, large lecture instruction, and flipping the classroom.

UW Libraries

Teaching & Learning at the UW Libraries provides teaching toolkits and services, including Odegaard Undergraduate Library's active learning classrooms.

UW Information Technology (UW-IT)

UW-IT Academic Services works with UW faculty and departments to use technology to improve learning outcomes. Find workshops for tools including the learning management system Canvas and the lecture-capture system Panopto.

UW-IT Learning Technologies also offers one-on-one consultations for faculty and instructors looking to use technology for teaching. Faculty interested in speaking with a specialist in educational technologies can email help@uw.edu.

UW Bothell

The UW Bothell Teaching and Learning Center (TLC) offers faculty support, including resources on topics including online tools for collaboration, and digital literacy and online publishing for student work. Check the TLC schedule for upcoming events. UW Bothell Learning Technologies provides support for the integration of technology in teaching and learning. Their website includes how-to guides, instructional resources and a blog.

UW Tacoma

UW Tacoma's Faculty Resource Center offers training and support on new pedagogy and technology. The Teaching Forum meets monthly to discuss effective practice. Academic Innovation is supported by the Teaching, Learning & Technology group for on-ground, hybrid and online teaching.

FURTHER READING

Useful blogs:

Agile Learning, Director of Vanderbilt's Center for Teaching

GridKnowledge, UW Tacoma's Assistant Chancellor for Instructional Technologies

Faculty Focus, Higher Ed Teaching Strategies From Magna Publications

Prof Hacker, The Chronicle of Higher Education

Teaching Forum: Talking Teaching at UW Tacoma

UW Bothell Learning Technologies

Wired Campus, The Chronicle of Higher Education

Online publications and virtual communities:

Campus Technology

eLearn Magazine

EdTech: Focus on Higher Education

EDUCAUSE, an online research community

HASTAC: Humanities, Arts, Science, and Technology Advanced Collaboratory

re:Learning, The Chronicle of Higher Education
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